Scientific American.

THE ADVOCATE OF INDUSTRY, AND JOURNAL OF SCIENTIFIC, MECHANICAL AND OTHER IMPROVEMENTS.

Vol. 3. New York, November 6, 1847. No. 7.

THE
SCIENTIFIC AMERICAN:
PUBLISHED WEEKLY
At 128 Fulton Street, New York (Sun Building,) and 13 Court Street, Boston, Mass.
By Munn & Company.
The Principal Office being at New York.

TERMS---$2 a year---$1 in advance, and the remainder in 6 months.
☞ See Advertisement on last page.

Poetry.

STRIVE ON.

Strive on—the ocean ne'er was crossed,
Repining on the shore;
A nation's freedom ne'er was won
When Sloth the banner bore.

Strive on—'tis cowardly to shrink
When dangers rise around;
'Tis sweeter far, tho' linked with pain,
To gain the vantage ground

Bright names are on the roll of Fame;
Like stars they shine on high;
They may be hid with brighter rays,
But never, never die!

And these were lighted 'mid the gloom,
Of low obscurity,
Struggling through years of pain and toil,
And joyless poverty.

But strive—the world's not all a waste,
A wilderness of care;
Green spots are on the field of life,
And flow'rets blooming fair.

Then strive—but, oh, let Virtue be
The guardian of your aim!
Let pure, unclouded love illume
The path that leads to fame!

TO A WEARIED WORKER.

"Rest?"—Thou must not seek for rest
Until thy task be done,
Thou must not lay thy burthen down
Till setting of the sun.

Thou must not weary of thy life,
Nor scorn thy lowly lot,
Nor cease to work, because such work
Thy neighbor prizeth not.

Thou must not let thy heart grow cold,
Nor hush each generous tone,
Nor veil the bright love in thine eye;
Thou must not *live alone*.

When others strive thou too must help,
And answer when they call;
The power to love, God gave to thee,
Thou must employ for all.

"Freedom and rest" thou wouldest have:
Freedom is service meet;
And rest of soul is but a name
For toil amid life's heat.

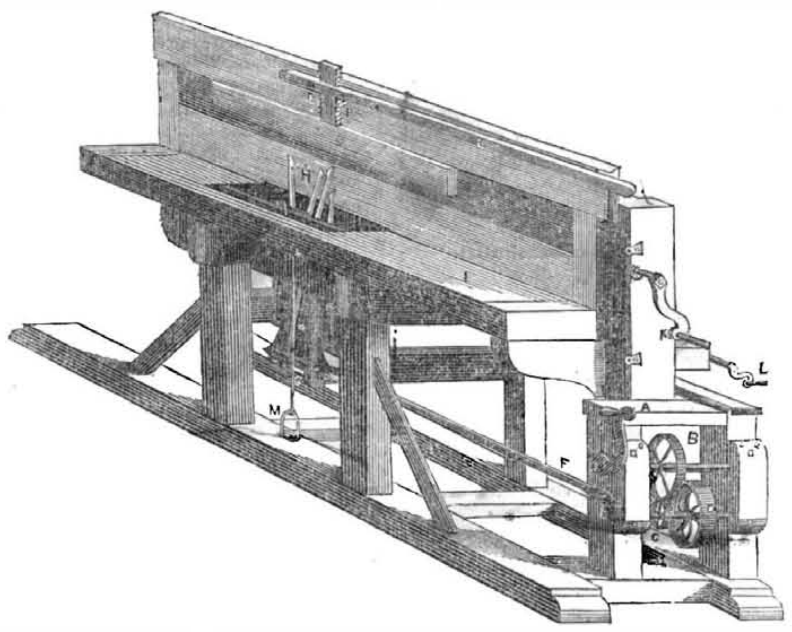
Unmoved to gaze upon the strife,
Is not true liberty;
To others thou must minister,
Wouldst thou be truly free,

In the outward world 'tis vain to seek
The Eden thou wouldst win;
That ancient paradise is gone—
Thine Eden is within.

A Curious Society.

A society in Cincinnati, called the 'Last Man,' held its anniversary meeting in that city on Wednesday last.—It was organized sixteen years ago, and but four of its members now survive,—which remnant met. No new members are taken in after organization, and the society continues annually to meet as long as one survives.

CHANDLER'S MORTICING AND TENONING MACHINE.



A number of patents have been secured for machines of this kind and undoubtedly there may be many opinions regarding the merits of the different inventions. It may, however, be sufficient to say, regarding the merits of this machine that it took a silver medal at the State Agricultural Fair and at the Fair of American Institute. It was invented by Mr. T. Chandler, of Rockford, Illinois, and it will cut as we have remarked in a previous number, a mortice six inches long and as many deep in half a minute. It can easily be adapted to all kinds of work, whether upon heavy timber or doors or window sashes, and it can be driven by steam, water or hand power. The tools cut a mortice very smoothly, without fracturing the timber although the partitions between the mortices may be very thin.

DESCRIPTION.—A, is a crank handle to use when the machine is operated by hand. It drives a shaft B, on which is a cog, or rack wheel which meshing into C, drives the crank E, and the pitman F, which works the cutters. D, is a band wheel, or drum, to be used when the machine is driven by steam or water power, and consequently C, B and A, are not in that case necessary to be constructed with this machine. G, is the pendulum connection of the pitman which works the cutters up and down one side after another as the crank revolves. I, is a table or frame, and L, is a crank to extend horizontally the frame or table I, by a rack and pinion not seen in the engraving, and K, is a crank to raise the frame up and down by rack and pinion in the same manner. O, is a frame for the stuff to be operated on and held down, more or less on one side or the other, by P P, rack teeth kept firm by a clamp on either side like the clutch of a capstan or escapement of a clock. R, is a lever to operate these clutches. M, is a stirrup to hold the work in its proper place. It will be easily observed that four chisels H, work in a peculiar manner by the crank motion, two working perpendicularly by the way they are set and two eccentric, which motions of the cutters keeps the mortice clean of chips, an important consideration.

Mr. Thomas Chandler is proprietor of this machine for this city and Brooklyn, and Essex Co., New Jersey. All information regarding it can be acquired by direct communication to him in this city, at No. 153 Greenwich street.

Water Works at Marseilles.

The arrival of the water of the Durance, in the neighborhood of Marseilles, France, to which it has been brought by a newly constructed canal, was celebrated by a fete. It is known that immense obstacles to this work have been met with all along its course.—These obstacles have all been overcome, and the aqueduct of Roquefavor finished. From the beginning to the valley of St. Anthony, these great works of art received the last touch. Then they could be opened to the waters of the river, which soon came to gladden the eyes of the farmers in the valley of the Aygalades, and on the borders of the Jarret. The first trial was crowned with perfect success. No accident happened on the passage of the stream flowing over a space of twenty leagues over one hundred and six aqueducts and four leagues of tunnel, three leagues in cuts, two leagues in embankments, four leagues on the sides of hills, and only six leagues plain.

Steamboat Built in the Woods.

A steamboat of 300 tons has just been built on the Kentucky river, in the mountains, fifteen miles from Lexington, and 100 miles deeper in the interior than a boat was ever before constructed. She has been built, out and out, from the forest tree to the builder's finish, by four men only.

The Boston Water Works.

The Boston Advertiser in noticing the visit of the Mayor and City Council of Boston to the Cochituate water works, says:—

"A portion of the party, being furnished with lamps, walked through a finished section of the aqueduct, three-quarters of a miles in length. There are now finished nearly three and-a half miles in length of the brick aqueduct, of which finished parts about a mile are on that part of the aqueduct north of the Pearson and Worcester Railroad; three miles are in Needham; one-and-a-quarter miles in Newton; and more than a mile in Brighton and Brookline. It was stated that the two tunnels through rock ledges in Newton and Brookline, one 3,300 and the other 1,150 feet in length, are more than half finished."

Fight Between an Eagle and a Boy.

The Doyleston Democrat says that last week a boy was sent as usual after the cows, but was attacked by a large eagle in a furious manner, and after having battled with it unsuccessfully for some time, was relieved by a dog, that at the time came to his rescue. Between the boy and the dog the eagle had to surrender, and was taken home in triumph, with the assistance of some of the neighbors. It is said to have been a noble bird Its length from tip to tip, eight feet.

RAIL ROAD NEWS.

Mobile and Ohio Rail Roads.

The South is now beginning to be awake to great schemes of internal improvement and the men at the south are grasping schemes of no small magnitude. One scheme is to build a Rail Road from Mobile to Cincinnati and the project once started will be accomplished, as Mobile exports about 18 millions of dollars worth of productions every year.

The distance from Mobile to the Ohio is estimated at four hundred and forty miles in a straight line, and from thence to St. Louis one hundred and fifty miles. Lewis Troost, Esq., Civil Engineer, who was engaged by the Company to make a reconnoisance of the route. has submitted an estimate of the cost of the railroad as rollows:

Grading 100 miles,	$2,500,	$250,000
" 340 "	4,000,	1,360,000
Superstructure 440,	10,000,	4,440,000
		$6,050,000

The Engineer says to this amount may be added $1,000,000 for right of way, turn outs, water stations, depots, locomotives, cars, and contingencies, making a grand totol $7,050,000 to place the road from the city of Mobile to the Mississippi river at the junction of the Ohio, in a working condition. At the distance of about 120 miles north of Mobile, the main line will meet with the extension of the Vicksburg, Jackson and Brandon Railroad.

The longest road in the United States, owned by one single company is that from Savannah to Macon 190 3-4 miles, the next is the Baltimore and Ohio Rail Road. the third on the list is the Georgian Road from Augusta to Atlanta, 171 miles long.

New York Railroads.

The Railroads will commence to carry freight under the law of last winter, on the 1st of November next, paying toll thereon.

Railroad Bridge over the Merrimack.

The Boston and Montreal road crosses Merrimack river within a few feet of Federal Bridge—and the great work of constructing it is almost completed The masonry, consisting of three piers and an abutment, was finished some months since, and the superstructure is erected and in rapid progress towards completion. The road to Sandborton bridge is ready for the rails—the first cargo of which was shipped at Liverpool two months since.

Great Speed.

The Stonington Train landed its passengers in Boston on Monday morning at 45 minutes past 3 o'clock. The steamer Oregon arrived at Stonington at half past 11 last evening, thus making the trip from New York, 125 miles, in 7 1-2 hours. Mr. Tucker the conductor on the Boston and Providence portion of the route, put the train through from city to city in one hour and twenty minutes.—*Bee.*

English Railways.

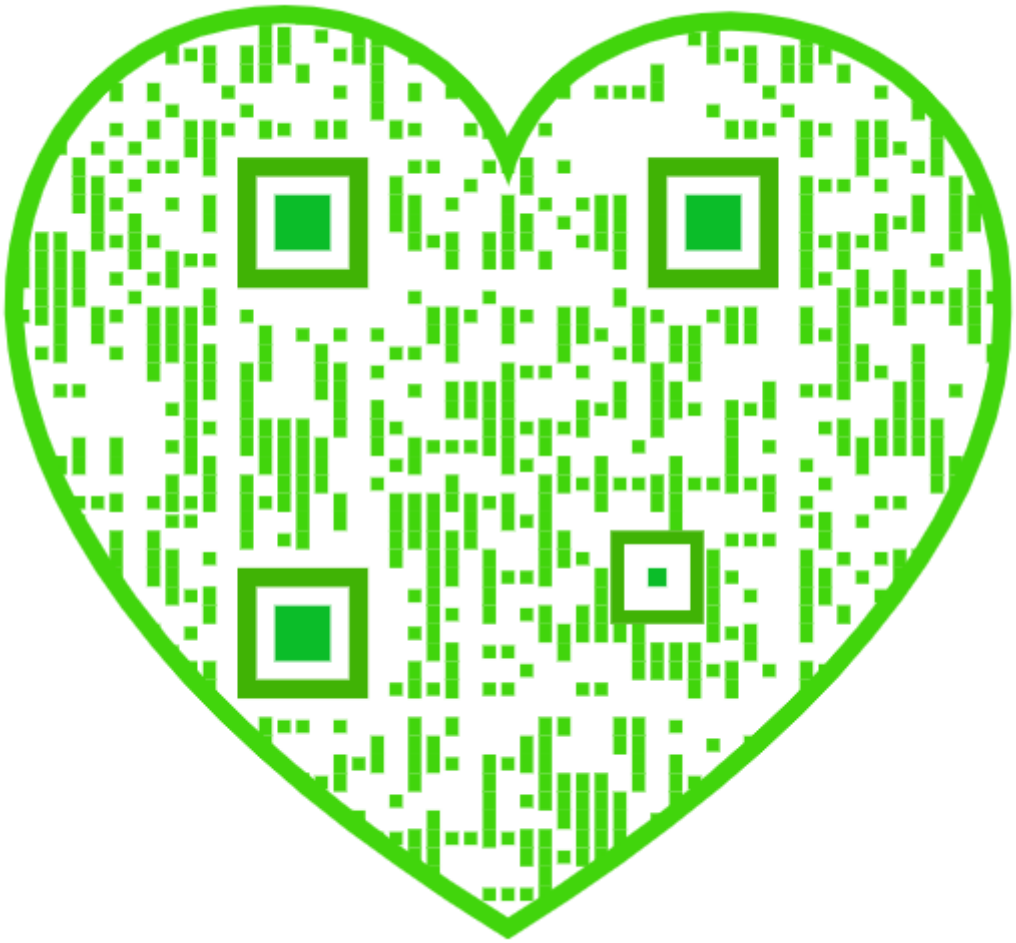
On the whole of the English Railways, the dividends at last year averaged seven and a half per cent. The profits on some were enormous, for a number of the lines in the returns were but partially opened No wonder there has been such a rush to invest money in railway stock.

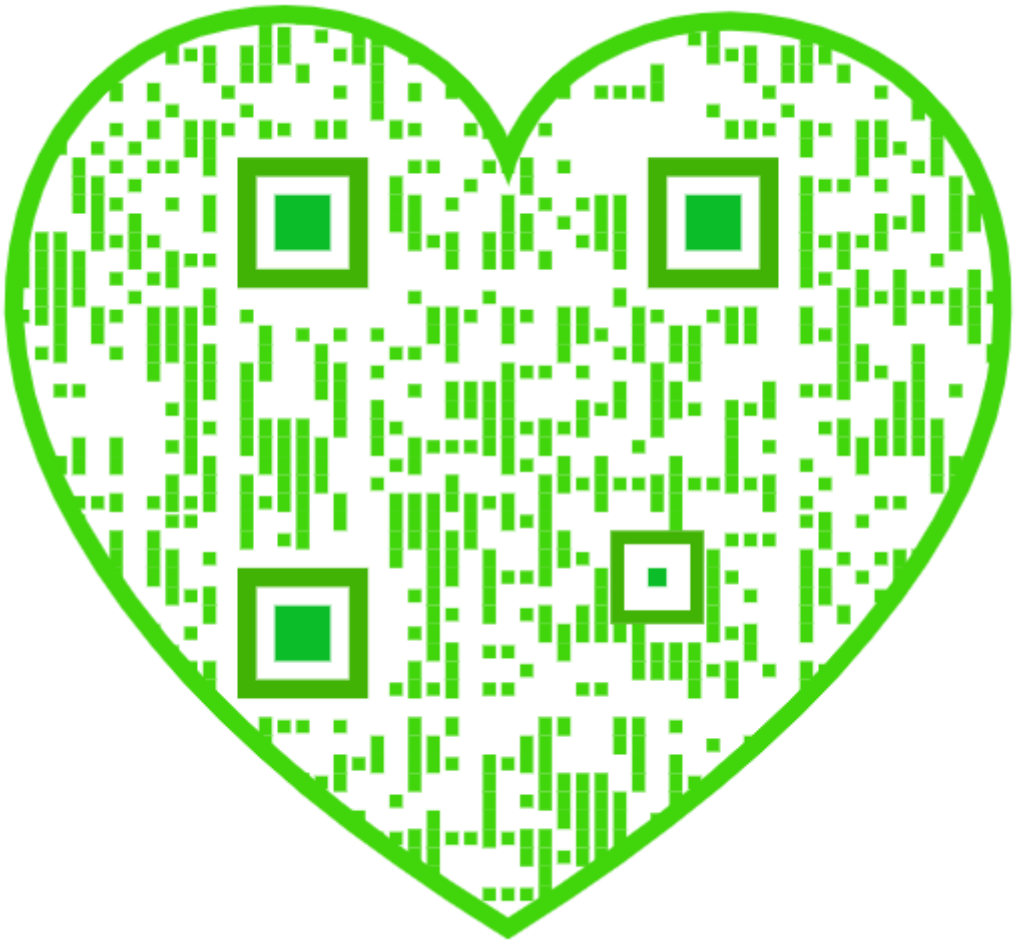
New Telegraph Line.

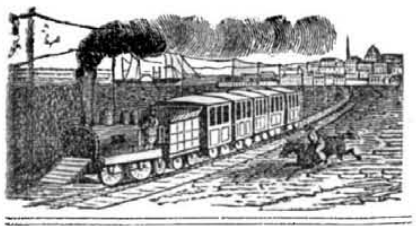
A telegraph line from Boston to Portsmouth, is to be established immediately. The wires, as we learn from the Salem Register, will probably run along the line of the Eastern Railroad from Salem to Lynn, and thence branch off to the upper route in Malden, entering Boston by the Portland Telegraph route, to avoid the difficulty of crossing Boston harbor.

There is a severe dispute between the agents for Morse's Telegraph and Mr. House, the inventor of the Printing Telegraph.

© 1847 SCIENTIFIC AMERICAN, INC







PHILADELPHIA CORRESPONDENCE.

Dear Sci.

The exhibition of the Franklin Institute closed last Saturday evening, and the address on that occasion was delivered by Joseph R. Chandler, Esq., and it was an able and fervent tribute of praise to the good accomplished by Institutions like the old Franklin.

In my former letter I merely noticed some inventions, intending to be more full and more minute in this communication, but I am sorry to say, and yet not sorry either, that the number and variety of the inventions and articles displayed render it impossible for any person to be both diffuse and minute in description. I must say, however, that a department not generally noticed in descriptions of Fairs, attracted much of my attention; that department was the Chemicals. There were large and beautiful crystals of the Prussiate of Potass deposited by Deland and Grant, which attracted much attention, as it is now extensively made in Cincinnati. It is used in making ink, and for paints, and as a dye drug to make the beautiful Nazarine Blue. There were also beautiful crystals of Iodine in differeni combinations, both yellow and red. In short, the chemical display was encouraging to all who have a taste for chemistry and who know its value.

The invention of L. Zingner, attracted much attention from its beauty and novelty, it was Veneering of various colored glass. The department of glass manufactures was rich, far beyond any previous exhibition. Philadelphia is justly celebrated for her Girandoles and Candelabras. A few years ago, these things were either imported from France or England, now we make them as beautiful and far cheaper.

There was a rich display of Musical Instruments, no less than fourteen pianos being exhibited, one of which was from Gilbert & Co.'s manufactory, Boston, an instrument of a very superior tone.

There were Baby Jumpers too, and Elastic Cradles likewise, for which Mr. Tuttle must receive from the rising generation, when they come of age, the honors he so justly deserves for his invention. The Rocking Fan Chair of Mr. Horst is a valuable invention, one which I certainly much admired.

Different collections of various manufactures exhibiting much mechanical skill and taste must necessarily be left out of my calendar of description. I can, however, end my letter with no better commendation of the Exhibition, than to say that it is generally allowed to have surpassed all its predecessors. G. R.

Philadelphia, Nov. 1, 1847.

Bull Versus Lightning.

Mr. F. O. J. Smith of the Boston Telegraph line, appears in the Boston Transcript of Thursday, with the following bold, novel, and unique challenge. Who'll meet him?

"I will deposit $1000 in the Merchants Bank against a like sum, that I have a Durham Bull, whose weight exceeds 2,500 pounds who will travel from Boston to N. Y. city, with a message of one thousand words, in less time than the whole telegraphic system patented to House can convey the same message, in consecutive words, from Boston to New York; and I will furnish the wires of the New York and Boston telegraph, free of charge to the House instruments, to carry out the undertaking. The offer to be accepted and the trial to be made during all the months of October and November of the present year.

FRANCIS O. J. SMITH.

Telegraph office, Boston, Oct., 27, 1847.

Shirts.

A patent has been taken out for dispensing with sewing in the manufacture of shirts, collars, and linen articles. The pieces are fastened together with indissoluble glue. What next?

The Caoutchouc Trade.

In the year 1828, the quantity of this article exported from Brazil, did not exceed 4000 milreis in value, and 20,000 pounds in weight whereas, in the last financial year, 1845—6, it amounted to upwards of 800,000 lbs. besides 415,953 pairs of shoes, the whole valued at 500,000 milreis. It becomes, therefore, a matter of great consideration, for Brazil not only to preserve this branch of trade in its present flourishing state, but likewise be able to augment its production in proportion to its increased consumption. No other branch of its export trade is profitable, since nothing but manual labor is required, and one man employed in its collection can obtain extract sufficient in one day, to make ten pairs of shoes, the price of which being 300 reis each, gives three milreis per diem, equal at the current exchange to 7s. 6d a day, which in that cheap country may be considered equivalent to $2,50 in the United States.

An Elevated Somnambulist.

Mr. Jessee Combes of 609 Water st., this city, was discovered about half-past 11 o'clock last monday evening, on the top of the liberty-pole at the corner of Gouverneur and Cherry sts., in a state of somnambulism. He was watched by the officers and citizens for a considerable time, when he was seen descending the pole Upon reaching the ground he ran several blocks before he could be overtaken, and when caught was found to have only his shirt, drawers, and boots on. The pole was 125 feet high, and when first discovered, he was on the top turning the vane. He was taken to the Station House of the Seventh Ward when he seemed rational, but had no recollection of what had happened. He got out of the dormer-window of his house, it is supposed as he retired very early, and when found all the doors were locked.

Painful Accident.

Mr. Gamble, the former gentlemanly railroad conductor so well known to travellers, between here and Philadelphia, on Saturday last met with a very serious misfortune. He was examining a door spring, of new invention, when the spiral wire of the spring escaped from its fastening and struck him directly in the left eye, almost entirely tearing out the ball. He has been in a state of great suffering ever since.

Hypothesis of Iron.

There is a great distinction between the alloys of metals and mixtures of oxides. There are some metals fonnd alloyed in their native state, such as platina and its compounds. The peculiarity of alloys of earthy basis detected in pig iron is that their quantity bears no proportion to the bulk of earth a blast furnace consumes, which is to three times the weight of iron obtained.

News Emporium at Utica N. Y.

Messrs. Canniff, and Co., have taken the spacious store, at No. 14 Liberty street, opposite the post office Utica, where they keep a general assortment of cheap publications, periodicals, and Daily and Weekly papers.—They are agents for the "Scientific American"

The White Mountains in Maine, on Tuesday week, were covered with snow as entirely as in the depth of winter. Snow fell at Buffalo on Wednesday week.

Mr Lassel has discovered another satellite of Jupiter, at Cambridge. By calculation it is supposed that there is still another.

Horse radish may be kept during winter by grating it while green and corking it up tight in bottles filled with vinegar.

Queen Victoria's "best go-to-meeting clothes" cost half a million of dollars. Those that Bonaparte used to wear, when emperor, on state occasions, nearly a million.

The rice crop, in the vicinity of Georgetown, as we learn from the Winyah Intelligencer, is principally gathered, and is unusually fine.

A "Farmers' College" has been established at Pleasant Hill, 9 miles from Cincinnati, which already numbers 100 students.

Mr. Barnes, one of the telegraphers of Mr. Riley in Cincinnati communicated and received dispatches from Louisville for one whole day, in listening to the ticking of the magnet and communicating with the wire instead of the key.

My brethren, said Swift, there are three kinds of pride the pride of birth, the pride of riches, and the pride of talents, but I shall not now speak of the latter, none of you being liable to that vice.

The Corporation of Washington City has passed a law that all free persons of color shall give good white security, each of a thousand dollars, to keep the peace for one year, and to pay two dollars for a certificate.

The Univercalum, is the title of a new paper just started in this city, by S. B. Brittain, late Universalist preacher at Albany, and others. Davis, author of the principles of nature is one of the Editors.

The wheat crop of Michigan, for the present year is estimated by a gentleman now preparing statistics for the Patent office in Washington, will not fall short of 8,000,000, nor exceed 10,000,000 bushels.

Fifty-five foreign vessels entered at the Boston Custom House on Monday—the greatest number by 13, of foreign arrivals, ever entered in one day at that port.

An Axe Factory is in operation at Norwich Conn., which turns out fourteen dozen axes a day.

John Van Hoozer, of Knoxville, Tennesee, who is one hundred and fourteen years old, has voted at every election in the United States.

The grandson of Charles Wesley has been appointed one of the chaplains in ordinary to Queen Victoria.

Twelve thousand emigrants arrived at this port last month, being about seven thousand morethan during the month of October, 1846.

The French steamer Philadelphia has not yet arrived. It is generally supposed that she has found her way into Halifax for coal.

Col. McPherson of Virginia the new Consul to Genoa sailed from this port last Monday.

The Baltimore Copper Company last week received an order for $100,000 worth of their copper for one house in the east.

The Lafayette Bank of Cincinnati has just issued new notes, having on one end the figure of Lafayette, and on the other that of General Taylor.

The inhabitants of La Beauce Canada East, refuse to pay their school tax, the darkness comprehendeth not the light.

The powder-mill of Lathan and Smith near Catskill, exploded last week, instantly killing three of the workmen.

An Apothecary was arrested in this city last Tuesday for counterfeiting wrappers and labels of Wister's balsam of cherry.

There was an increase of tolls on the Erie Canal from the opening of navigation until the 7th of October, over those of last year, of $773,277.

The New Orleans National has intelligence that Gen. Taylor will arrive in that city shortly.

The wheat crops of Wisconsin and Missouri, average twenty bushels to the acre.

The Middleton Jail, Frederick Co., Md. is up for sale. Who will buy.

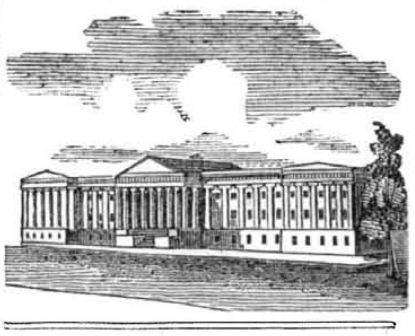
The potato rot has appeared in Oswego county, and has nearly destroyed the crop.

The whereabouts of Santa Anna, is put down in the list of uncertainties.

Colonel Tremont's trial commenced at Washington last Tuesday.

Operations have been commenced on the Canadian Railroad.

Pork packing has commenced in grand style in Cincinnati.



LIST OF PATENTS

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending Oct. 30, 1847.

To Samel Fahs and Augustus H. Lochman, of York, Penn., for improvement in Bedstead Fastenings, (said Lochman having assigned his right, title and interest to said Fahs.) Patented Oct. 30, 1847.

To Arnold Buffum and David Buffum, of Brooklyn, N. Y., for improvement in Rotary Engines. Patented Oct. 30, 1847.

To David Brown, of New York, for improvement in ship building. Patented Oct. 30, 1847.

To William H. Mackrell, of New York, for improvement in fastening Door Knobs.—Patented Oct. 30, 1847.

To Edward S. Townsend, of Trenton, N.J for improvement in machinery for making Wire Rope. Patented Oct. 30, 1847.

To Samuel Streeter, of Detroit, Michigan, for improvement in machinery for cleaning snow and ice from railroad tracks. Patented Oct. 30, 1847.

To Jonathan F. Barret, of North Granville, N. Y., for improvement in Horse Powers.—Patented Oct. 30, 1847.

To Dennis Newton, of Homer, Ohio, for improvement in Washing Machines. Patented Oct. 30, 1847.

To J. M. Abels, of Cato, New York, for improvement in Water Wheels. Patented Oct. 30, 1847.

To Charles J. Shepherd, of New York, for improvement in boiler plates for Cooking Stoves, &c. Patented Oct. 30, 1847.

RE-ISSUES.

To Daniel Clow, of Port Byron, New York, for improvement in Wheat Fans. Patented June 16, 1846. Re-issued Oct 30, 1847.

Hydrogen gas is colorless and fatal to animal life when taken into the lungs. It is the lightest of all bodies which are known to possess weight. One hundred cubic inches weigh only two grains It is inflammable, yet it extinguishes flame. Its atomic equivalent is 1.

Three canal boats left Baltimore on the 25th ult. laden with coal for this city. They were to come by the Chesepeake and Raritan canals. This is the first shipment of coal by this route.

An honest farmer thus writes to the Managers of the Massachusetts Agricultural Society; "please put me down on your list for a bull."

The Chicopee Falls Company, incorporated about ten years ago, for manufacturing purposes, recently closed up, and the stockholders received their first dividend from the concern of $1 60 on $100, the whole original capital having been absorbed.

There is a manufactory at Juliet, Illinois, belonging to Mr. J. A. Matterson, which turns out 200 yards of jeans, flannels and country cloth daily.

The manufacturers of coarse cotton goods in the northern States must act cautiously for their own interests.

Kendall speaks ot prickly pear trees growing in Mexico, with trunks two feet in diameter, growing ten feet high, without a limb, and then branching off in every direction.

The Illinois and Michigan canal will not be completed this Fall, as has been anticipated, but the hope is held out that it will be ready for the early spring trade.

The "Odd Fellows' Chronicle" states the amount of the fund owned by the society in England, to be very nearly three-quarters of a million sterling, or about $3,750,000.

© 1847 SCIENTIFIC AMERICAN, INC

The Discovery of the Planet Neptune.

A lonely, almost sunless planet, far withdrawn into the dim voids of space, nearly to the limit of human power of search for star so pale and small, has wandered slightly from the path which man has traced out as the one allotted to it among the hosts of heaven. It is but a little way; a hairbreadth here and a hair-breadth there; and that path in its full extent is very vast; surely each deviation can be of small account in it; and surely, too, man may easily have lost himself amid these mighty journeyings, and erred these hair-breadths in his prophecy of such a cycle. Not so, his prophecy is again and again tested by a mightier "power of numbers" than Pythagoras dreamt of, and no fault is found in it; and not so too for the path itself; these hair-breadth aberrations, if unaccounted for, indicate that law is powerless, and order all gone wrong. And now the thoughtful student bends in his solitude over the records of these deviations. He seeks to behold in its obscurity of dimness and distance a heavenly orb on which the eye of man has never been fixed; but his eye ever seeks the heavens: and night after night the stars come out in the fullness of their glory and the kindliness of their love, yet fail to woo him from the complex records and figured papers over which his pale and aching forehead droops. His chase is one which leads him forth into the unknown things, and the unknown and far off of space But it is the mind and the soul alone which journey thither. Shut out that glaring sun from him: its light cannot aid him; and he is seeking a realm where, if its force is, its light can hardly be. Shut out those gleaming night stars too: he seeks to know the place of this hidden one among their multitudes; but they cannot and will not diroct him. These loose scraps of paper, covered with strange devices and complicated signs, are of more avail than all the guidance and enlightenment of sun or stars The haven is gained at last; he stands in spirit upon the new found world; surveys its greatness, tracks its path, feels the whirl of its flight; casts one brief glance from it into the yet deeper night beyond; and bids others, whose task it is, seek and see it with the bodily eye. And it is according to his faith; his faith in the power of numbers, in the stability of order, in the assurance and perfection of law; and deviation and irregularity stand revealed as results of the perfection of order and the assurance of law; or—to go to the essence and reality of which order and law are but the apparent and sensible exponents—of the presence in his providence, faithfulness, and power, of HIM who calleth all these stars out by name, and leadeth them on in order.

A Liberal Endowment.

Another monastic educational institution is to be founded in Glasgow. One of the "merchant princes," Mr. Alexander Hermitage, has left nearly £60,000 to endow a hospital for the "education, clothing, and, if necessary, the support of poor children of both sexes" in the city. By all means let really poor children have tuition, clothes and food for nothing, but let there be no estrangement from the parental roof.—especially, let there be no more taking of children from homes already comfortable, in order that competent, but penurious parents may shift a natural burden from their own proper shoulders, and so, at the sacrifice of independence and of their children's affection, bring about the elemosynary up-bringing of their own flesh and blood.

A Fervent Admirer.

A clergyman preaching in the interior of Alabama chose for his text a passage of Scripture which had been variously interpreted In concluding his sermon he exclaimed "these are the conclusions I have arrived at after the most diligent study, but I must inform you that the *commentators disagree with me.*" —A farmer, a great admirer of the parson's eloquence, had paid great attention to the discourse. He went home filled a large bag with choice kidney potatoes, and packed them off to the Rev gentleman's house with the following note:—"Reverend and Dear Sur.—You told us this mornin as how *common taters didn't agree with you.* I hope as how choice kidneys does."

The Bible.

Dr. Plaifaire, in a sermon preached before the University of Cambridge, about the year 1573, says—

"Before preaching the gospel of Christ, no church here existed, but the temple of an idol; no priesthood but of paganism; no god, but the sun, the moon, and some hideous image. In Scotland, stood the temple of Mars; in Cornwall the temple of Mercury; at Bangor, the temple of Minerva; at Malden the temple of Victoria; at Bath the temple of Apollo, at Leicestor, the temple of Janus; at York, where St. Peter's now stands, the temple of Bellona; in London on the site of St. Paul's carhedral, the temple of Diana; at Westminster where the abbey rears its venerable pile, a temple of Apollo." Who can read such a statement of facts, well authenticated as they are, and consider what that country now is, without acknowledging the vast obligations under which we are laid to Divine Revelation? What but the Bible has produced this mighty renovation?

The Arctic Expedition

The month of October, 1847, says the Liverpool Albion, is now at hand, the period named by Capt. Sir John Franklin when intelligence might be expected relative to officers and crews of the Erebus, and Terror, steam-screw-propeller vessels, employed in the Artic Expedition; and captains of vessels may now expect to meet with some of the hermetically sealed tin tubes, containing accounts of the vessels, written in six different languages which were to be thrown overboard at certain periods, in the hope that some of them might be picked up by vessels navigating the North Seas.

The Paris Printers.

The Paris Printers have been for some years past in the habit of dining together about the commencement of autumn. This year on applying to the Prefect of Police for the customary permission, a refusal was given. The men, finding a public dinner thus rendered impossible, appointed a committee to seek out private premises suited to receive their usual number of guests, namely 500 or 600 persons. M. Gerbes, a master printer, placed at the orders of the committee an enclosed piece of land in the commune of Vaugirard, and there they erected a large marquee, under which tables were laid out for dinner. The men, on Sunday, were on the point of sitting down to table, when two commissaries of police entered, and, in the name of the authorities ordered them to disperse.

Meanness Exemplified.

The New Orleans Delta tells a very good story of a persimonious youth who was too mean to afford the expense of stockings during the prevalence of the epidemic, though worth five or six thousand dollars in cash. In consequence of this exposure of his health he took the fever and was carried to the hospital. The Doctor found him in almost a dying state, and told him with tears in his eyes, that he probably could not live more than twenty-four hours,. The patient replied that he supposed he must submit—but he immediately inquired what the doctor supposed his funeral expenses would amount to? The answer was about $25. The young man exclaimed, "O, Doctor, don't say that. It is higher than other people pay, and I can't afford it." The editor adds in regard to the young man, "that the meanness of his disposition struck into his system, and drove the fever out, and he recovered."

Flying Artillery.

A writer in the Nashville Banner says Kosciusko drew up a treatise on flying artillery for General Davis, of South Carolina, in the year 1801, and that the general gave copies of the work to Mr. Jefferson, and also to Captain Macomb, afterwards Major-General of the United States' army. From this it is inferred that to Kosciusko, is due the honor of introducing that effective arm into our military service.

Fine Arts in Australia.

There has been a great exhibition of paintings in Hobart town. This is illustrative of the advance of civilization. Among the exhibitors was the Bishop of Tasmania.

The Tea Plant In India.

In reference to the cultivation of the tea-plant in the British Dominions, the London Horticultural Magazine says:—

We learn from the Calcutta Gazette, that the efforts of Dr. W. Jameson, superintendant of the botanic provinces in the north-west provinces of India, to introduce and extend the cultivation of the tea-plant, have beeen highly successful. The tea-brokers in England have moreover, pronounced the Indian tea equal to China tea of a superior class, possessing the flavor of the orangepekoe, but more than its usual strength, and, in other respects resembling that imported under the name of ningsyong. The tea-tree in Kemaoon is not only identical with the China plant, and as capable of being made into as fine a description of tea, but the climate and soil in Kemaoon are as suited to the favorable growth of the shrub as the finest of the Chinese localities, and, moreover, the tea is as highly prized in the districts in which it has been raised as it is in England. One hundred and seventy three seers of it were recently sold at Almorah, and produced from four to five rupees the seer, a price equal to the best foreign tea sold in Calcutta. According to the calculation made by Dr. Jameson, the price for which it can be raised is so low as to afford the greatest encouragement for the application of capital; he estimates that if cultivated on a sufficiently large scale, the prime cost in Calcutta, including every expense, would be little more than eight annas a seer, or one-eighth of the present price. Supposing the cost of cultivation to be double what is here estimated, a sufficient amount of profit would still be left. The capacity of the provinces of Kemaoon and Gourhwall for the enlarged production of the article, does not appear to be limited to particular localities. According to the latest report that has been furnished, 176 acres were under cultivation, containing not fewer than 322,570 plants. The crop is thriving in different places over four degrees of latitude, and three degrees of longitude: and 100,000 acres are available in the Dhoon alone for the purpose of tea cultivation. At a maund an acre, they would yield 7,500,000 pounds, which is equal to one sixth the entire consumption of England.

The great iron works of the park of Moeskirch, in the grand duchy of Baden, belonging to the Prince de Furstenburg, have been destroyed by fire. The loss is estimated at several millions of Francs, only a portion of which is insured. The destruction of the buildings alone is estimated at 150,000 florins (380,000f.) About 900 men employed in the works, all of which with their families are now without resources.

The great tunnel through the mountain on which stands the town of Weiburgh, in the Duchy of Nassau, formed for improving the bed of the Lahn, has just been terminated after five years' continuous labor. The waters of the Lahn were to be let into the tunnel on the 11th, and 2,000 gas lamps were to be lighted and always kept burning.

Iron Horse Rider.

A stalwart fellow looking for the first time at a locomotive at Edinburg, Indiana, exclaimed, "I wish I had that fellow out on the big prairie, where I could stradle it, and *make the cussed thing hump itself till it was clean out of breath.*"

The Carpet Factory.

We learn with pleasure, that a company has been formed in the city of Schenectady, for the purpose of manufacturing carpets and rugs. The corporate name of this company is, "Schenectady steam Mills," its capital stock is $30,000 divided into six hundred shares of fifty dollars each. Its business is to be transacted by five trustees.

A Boston Caricature.

A *fat* fellow on horseback, enquiring whether he could pass *free* through the turnpike gate; who is answered by a gaping urchin that "there is nothing like trying, as a load of hay passed through that morning without touching."

It is said that the altar service, images, &c., in the Cathedral in the city of Mexico are worth over $400,000

Hold Him.

Who that has a heart does not feel for the close, deep and infinitely passionate author of the following lines:—

Was I court-plaster, I would be
A patch upon her lip:
To spend a life of ecstacy,
And sip, and sip, and sip?

Was I a pair of spectacles,
How dearly I would prize
A situation on her nose,
To look her in the eyes!

How would it be friend, if she had decayed teeth, and squint eyes.

Have Respect for Your Calling.

Here's an illustration. A mechanic passing along with his saw and axe in his hand, came up with a master sweep talking familiarly with a smart looking boy.

"Is that your son?"—inquired the mechanic.

"Yes." the sweep replied "he is."

"You dont surely intend making a sweep of that little fellow, do you?"

"If he behaves himself," rejoined the father I shall, but if he is not a good boy I will bind him apprentice to a carpenter, or some such trade.

Invention for the Dandies.

In the list of patents recently taken out in England, we find that one "Thomas Battye, of Woburn place, Middlesex gent." has secured a patent for an "improved mode of retaining the waist of the human body to a desirable form, without producing the inconvenience resulting from too tight lacing of stays or corsets, or buckling of belts, waistbands, or girdles."

It ought to conclude with or "pants."

Love.

Somebody says that a woman who loves, loves for life unless a well founded jealousy compels her to relinquish the object of her affections. And somebody else says that a man who loves, loves for life also—unless he changes his mind.

Prodigious.

"'That's a wery knowin hanimal of yourn,' said a Cockney gentleman to the keeper of an elephant.—'Very,' was the cool rejoinder —'he performs strange tricks and hantics, 'does he?' inquired the cockney, eyeing the animal through his glass:—'Surprisin,' retorted the keeper, 'we've learned him to put money in that box you see up there. Try him with a crown piece.' And, sure enough, he took it in his trunk, and placed it in the box. 'Well that is wery hextraordinary—hastonishing truly!' said the green one, opening his eyes. 'Now, let's see him take it out and hand it back?' '*We never learns him that trick,*' retorted the keeper, and turned away to stir up the monkeys and punch the hyenas."

Old Dean Swift was a queer chap and has left us many *queer sayings.* He said, and very truly too, that "Praise is like ambergris; a little whiff, and by snatches, is very agreeable, but when a man holds a lump of it to your nose, it knocks you down."

A shrewd observer of human nature, who has got out a patent dictionary, defines modern love as a "composition of one part of affection to nineteen parts of gold"

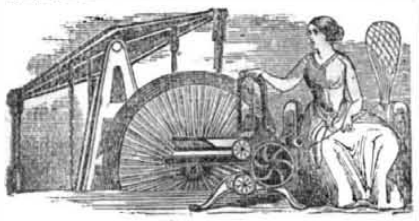
A fellow at Canajoharie, named Stephen Fox, was lately mulcted in $2,000 in an action for slander, brought by Catharine Wagner, whom he attempted to seduce, but failing, sought revenge by boasting of his success.

A Little Nearer.

A parishioner complained to the parson that his pew was too far from the pulpit, and that he must purchase one nearer. "Why?" asked the parson; "can't you hear distinctly?" "Oh, yes, I can hear well enough" "Can't you see plainly?" "Yes, I can see perfectly" "Well then, what can be the trouble?" "Why, there are so many in front of me, who catch what you say first, that by the time your words reach my ears, they are as flat as dish water."

Two new townships were purchased by German emigrants in Marion County, Ohio, last month.

© 1847 SCIENTIFIC AMERICAN, INC



New Inventions.

Dentometer.

Dr. Morton of Boston, has invented an ingenious instrument which is intended as a meter for the teeth, or rather for the sockets of the teeth and the jaw, to enable dentists in the manufacture of sets of teeth, to determine to a mathematical certainty, the exact shape of the mouths in which they are to be placed, and to detect in an instant any discrepancy either to the form of the plate, or in the relative position of the teeth as set upon it. By means of this, then, there are several points in the art of dentistry gained, which are of the most vital importance, both to the operator and the patient. The operator is enabled at a glance, to detect the most minute deviation from the proper form in his work. An invention like this must surely be appreciated by every dentist; and its value apparent to every person.

Scale Preventer.

A Mr. Lamb of England, has lately obtained a patent for preventing steam boilers from incrusustation. It is constructed on a mechanical principle and is said to preserve boilers free from deposit, by ejecting from the water the impalpable particles, which, by their subsidence on the flues occasion incrustation. A blow-off pipe terminates inside the boiler, a little below the usual water-level—the aperture being closed by a valve upon one end of a lever, the other end being jointed to the spindle of a float, which rises and falls with the fluctuations in the water level, and, should the water fall too low, the blow off pipe is closed, and more water issues until the proper level is restored. The invention has been applied to numerous steam boilers and land engines with every success.

New Rocking Chair.

Mr. L. V. Badger, of Boston, proposes to construct a Rocking Chair which will surpass the Fan Rocking Chair, in point of utility for warm countries. The rockers are to be placed on frames and the front and back regulated by spiral springs or stays of india rubber. The under part of the chair is to be covered with suitable material and valves like those of a common bellows made on it communicating with tubes which can be so arranged as to keep up a continual current of air around the person who is rocking the chair, as the chair when set in motion compresses the bellows and forces the air through the tubes. The air may be made to play upon strings in the passages of the tubes and pleasing sounds like those of an Æolian Harp, will lull with syren voice the person who would desire true luxury by a rock in such a chair. This hint to an ingenious chair maker is free for his use, only we would say send a chair to the inventor. We have no doubt but chairs constructed on this principle would meet a ready sale.

Improved Rifle.

Mr. E. Wesson, of Northberry, Mass., is reported to be the best rifle maker in the world, and his war dogs are known by the name of Wesson's Patent Muzzle Rifle. Lately at Springfield, says the Hartford Times, notice was given that the Wall rifle (which we have previously noticed in the Scientific American,) would beat any other rifle in shooting at the distance of half a mile from the mark — Mr Wesson went with one of his small rifles carrying 50 balls to the pound, and it is reported that both in accuracy of aim and carrying distance Wesson's rifle came off conqueror.

Mr. Wesson has lately invented a rifle with seven chambers all of which are discharged at once. Whether this latter invention will be any benefit or not, we cannot tell, but it is well known that a sheaf of muskets fitted on a swivel, and discharging at once, was an invention which cost the government some money, and they were afterwards sold on our docks for old iron.

Patent Self-sharpening Cultivator.

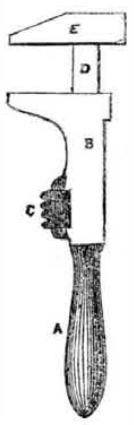
Mr. J. Rogers, of St. Lawrence Co. N. Y, has invented and patented a valuable improvement on the Cultivator, by having the teeth made of steel plate of such size and dimensions as to be strong and shaped with a die so as to form a shank out of the same piece. The teeth wedge nicely into the frame and wear sharp, lasting for a number of years,

Wheat Mill.

A New Wheat Mill has been invented by Mr. S. Bentz, of Washington County, Maryland, which first takes off the bran from the grain, leaving the kernels of pure flour to be mashed and put in barrels.

We have seen some of the wheat from this mill, and must say that as far as superior hulling is concerned, this mill as far surpasses mills in use as they do the old querne.

Improved Screw Key



The above is an engraving of an improved Wrench, manufactured by George C. Taft and G. H. Goodman, of Albany, N. Y. A, is the handle ; B, the stock ; C, the screw ; D, the slide, and E, the head. The advantages of this key are apparent. In the inside of the stock there is a rack which is worked by the screw C, and this rack is covered up free from dirt while the screw can be worked with the thumb and all used with one hand. The ease with which this can be done must make this Key invaluable to every mechanic, as the fixed jaw is in the handle and the larger the nut to be screwed up or down the greater is the lever power. We think this key superior to Mr. Fenn's, although Mr. F.'s can be worked as easily with one hand. We believe application has been made for a patent.

Surmounting Steep Gradients by Locomotives.

Mr. Nisbet's plan is by having a ring, or circle of strong teeth, bolted or affixed to each of the sides, or to only one of the sides of each of the two driving wheels of the locomotive engine, and which teeth take into the teeth of racks, laid down on one or both sides of the rails, wherever there is an ascent. These rack bars commence at a distance from the actual beginning of the ascent, equal at least to the greatest length of any train which may travel on the line, and increase by regular gradation from a height only just above the ground, to the full depth of the teeth of the wheels ; and they are at first bevelled off on the entering side to a sharp point, and become successively less bevelled, and broader at the points according to the increase of height. The teeth of the wheel rings will thus have fairly entered those of the racks, and have obtained a perfect hold upon them, by the time their assistance is required to propel the locomotive up the ascent. The racks should be prolonged beyond the top of the ascent equal to the distance they preceded it, and the teeth be graduated in the same manner. On railways intersected with many crossings, the patentee prefers using one circle of teeth only to each wheel ; this he places on the inside, as there is ample room for it, where the flange passes. By another arrangement, the toothed rings are connected to the driving wheels in such a manner that, when not in use, they can, by a lever, be raised 3 or 4 inches so as to clear the rails in crossing or any other obstructions likely to be met with. The advantages of this plan of Mr. Nisbet's are not confined to ascending inclines, but would be equally efficacious in retarding the tendency to too rapid descent down steep inclines, by which a train would be placed in imminent danger ; the racks and wheels could be applied as complete and very efficient breaks. When in operation, it should be understood, that no part of the weight of the engine is borne by the rack—the driving wheels still resting as usual entirely on the main rails ; the teeth of the wheels thus taking into those of the rack with the greatest ease, and without causing the slightest jolting motion. Although the plan of toothed wheels and rails is not new—having been among the earliest of railway plans, and continued until the opening of the Liverpool and Manchester line, even on level lines—the manner in which it is here proposed to be applied, is well worthy attention, as it is evident it would answer the purpose intended, and cause a vast saving in the construction of railways.

Improved Railroad Car Axle and Wheel.

Numerous plans have been proposed to lessen the friction on car wheels when moving in curves, as it is well known that fixed solidly upon an axle, there must either be a sliding or griping on the rail when the carriages move in narraw curves. One plan to remedy this evil and to insure less general friction is presented in this engraving.

A, is a wheel ; B, the shaft or axle, and C C, journals. It will be seen that one wheel is solid, fixed firm on the shaft, while the other is loose, or made free to play on the axle. A, represents the loose wheel, and D, the inside of it as it is cast with a cup rimmed out, which after being hung on the axle, is filled with composition, so that it fits close to the axle and still moves free upon it at the same time. It will be observed that the plan of filling up the cup or box in the wheel with composition and fitting it close and firm to the axle, is an excellent one, and the wheel must operate smooth and beautiful.

This wheel and axle is the invention of Messrs. George C. Taft and G. H. Goodman, formerly of Worcester, Mass., now of Albany, N. Y. They are excellent mechanics and we hope that Albany, arising to a true sense of her important commercial position, will encourage, as every wise corporation should, mechanical genius.

Randall's Elevated Railway.

A number of enquiries have been made relative to Mr. Randall's invention, and as the model was exhibited lately we take this opportunity of giving some information regarding it. We have been informed that the model constructed by order of the Common Council of this city is entirely of metal and cost $4000 and two years labor. It weighs about three tons, is seventy six feet long and nine feet wide. It is to be erected only 12 feet above the line of curbstone. The passenger cars, which are to be propelled by a stationary engines and an endless rope, do not stop to take in or let down passengers. This is accomplished by means of a tender, which passes along a side track, and by means of a brake pressing upon a brake plate fixed to each car, the speed of the tender is got up to be equal to that of the passenger cars, before they are fastened to each other, for the exchange of passengers. To prevent the cars from leaving the railway, each car is confined by sixteen pullies, with vertical shafts. two to each of the wheels. It is also provided that if either the axles, the shafts, the car wheels, or the transverse beam which passes quite across the street, should break, no damage would arise from the breakage. Passengers need not walk up the stairway, but ascend by a screw shaft, containing a sofa, on which they ride from the pavement to the promenade. The model was constructed by Mr. Randall, the inventor, by whom it is patented.

Gas.

Mr. Castor, of Boston, has discovered a new mode of generating gas from common rosin which possesses the important advantage of great economy, nnd emits a light of remarkable brilliancy.

INVENTOR'S CLAIMS.

Guard Cylinders.

To Francis A. Calvert, of Lowell, Mass. for improvement in Guard Cylinders, for Burring Machines. Patented 14th August, 1847. Claim —Having thus described my improved saw-guard cylinder, I shall state my claim as follows: What I claim as my invention, and desire to have secured to me Letters Patent, is a "saw-guard cylinder," made in one solid piece, with the teeth *a a*, and groves, *b b*, shaped and set spirally substantially as herein above set forth

Coupling Line Shafts.

Ebenezer M. Rice, of Worcester, Mass., for the improvement in coupling line-shafts. Patented 14th August, 1847. Claim.—I do not claim as my invention merely coupling shafts together by means of disks, or flanches on the end of the shafts, as this has long been known nor by the simple use use of the sheve that passes into the periphery of the parts coupled ; but what I do claim as my invention, and desire to secure by Letters Patent, is the method of coupling shafts by means of the circular flanches, disks or plates on the ends thereof, and grooved or feathered on their periphery in lines parallel with the rings which fit out to the periphery by flanches, disks, or plates, substantially as described, in combination with the mode of clamping the two discs by screws passing through the two disks and the flanch of the embracing ring, whereby the projection of one shaft into the other as a means of keeping them in the same central line is obviated, as described, and at the same time the two shafts are champed together endwise to prevent sagging, and warping, as described.

Improvement in Rivets.

To Frederick William Wood of New York, for improvement in Rivets for Leather Bands Patented 14th August 1847. Claim, I do not claim to have invented the feather edged, or counter-sunk rivet-head, as that form is well known ; but I do claim as new, and of my own invention, and desire to secure by Letters Patent of the United States, the application of rivets so formed in the head conjointly with a feather edge burr, having a concave or dished face, with a conical hole to receive the clench and finish the rivet flush, with their faces on both sides of the band, substantially in the manner and with the effects described and shown.

Riveting Leather Bands.

William H. Jennison, of New York, Assigner to William Kumbel, for improvement in Rivetting Leather Bands. Patented, 14th August, 1847. Claim, what I claim as my invention, and desire to secure by Letters Patent, is the above described form of rivet, in combination with, and for the purpose of uniting the leather belts, suhstantially as described, which I call the concave head and oval shank rivet.

Casting Door Plates.

Julius A Pease, of Philadelphia, Penn., for improvement in casting Door Plates. Patented 14th August, 1847. Claim.—What I claim as my invention, and desire to secure by Letters Patent is the combination and arrangement of a mould and the letters of the alphabet, as described, for the purpose of casting door and other plates, with the letters or name sunken in the face of said plate, and said plate when cast, together with said letters, to be cast in one solid piece by one operation.

Ketchum's Mowing Machine.

The mowing machine of Mr. Ketchum, of Buffalo, is as simple as a wheel barrow and works beautifully on smooth ground. It will work any where that the horse rake will. A boy with two horses will cut from 15 to 20 acres a day. The grass is left evenly spread over the ground. By an alteration, which can be made in half an hour, it will become a good reaper, doing as much as any other, and leaving the grain out of its way so that you need not bind any faster than you choose. It goes upon one wheel, and is all iron except the tongue. Price $100, warranted.

Two teaspoonsful of salt dissolved in half a gill of vinegar, is a good remedy for diarrhœa, the second dose is said to be a sure cure.

© 1847 SCIENTIFIC AMERICAN, INC

NEW YORK, NOVEMBER 6, 1847.

Encourage Invention.

Instead of encouraging mechanical genius, it may truly be said that governments have been the very foes of invention, inasmuch as they have feasted, flattered, protected and provided for warriors and statesmen, poets and literati, and, with but a few exceptions, have looked with cold and blunted feelings upon the untiring energies and efforts of inventors of machinery, and the labors of those who have toiled in the pathway of scientific discovery. It is indeed true that some men, like Cuvier and Davy, have been dubbed with Sir and Baron on account of their brilliant discoveries, but not until the purses of these men were heavy with gold were they considered deserving of the honor. And in fact, it may truly be said that governments have rather placed barriers in the path of the inventor, instead of encouraging and assisting him — There can be no doubt but that it is an advantage to every country to secure the learning and genius of all that country's inhabitants and also to foster the same by every indulgence to the great, good and inventive, and if possible to secure the learned and talented of other countries also. Wise governments and wise princes have always been distinguished for encouraging men of learning and genius. If such a course of conduct is politic in governments, we commend all modern professed civilized governments to be guided by it ; for it is a stubborn fact, more especially in the foreign policy of all governments, that instead of encouraging genius and protecting the property of the inventor by laws for the inventor's benefit and the good of the country to which he may apply for protection, such a thing is done only as a boon and by paying well for the benefit of all the protection granted to him.

The American government is perhaps the most liberal of all others in the protection of patent rights, yet her foreign policy in relation to foreign inventions, inventions that might be of great benefit to us, is just the same as that of other countries. An American must pay about $500 for a patent fee to England, and an Englishman must pay the same as a patent fee to the United States, and for all other countries $300. The Hon. Edmund Burke, Commissioner of Patents, recommended in his last report that Congress should "provide contingently for the reduction of the duties required on application for patents by the citizens of foreign governments to thirty dollars, whenever it shall appear that corresponding reductions have been made by these governments of the duties required of American citizens." We would sincerely hope that all governments would act upon this recommendation, so that the fruits of genius may become universal property and yetbe protected and respected by all. This would be a great advantage to America and American mechanics ; for with the inventive turn of mind which our people possess in general, we might well say in regard to patents, using a financial term, "that the exchange would soon be in our favor." Within the past week no less than five different individuals have made enquiry of us in respect to the expense of an English patent, and when we informed them that the cost altogether would be about $700, they gave up all hope of being able to get an English patent for want of the means ; and we are positive that one of the inventions at least would soon be adopted in Britain much to the inventor's advantage were he able to secure a patent there.

We cannot say that we would reduce the standard fee to $30, but $50 by a foreigner for a patent fee to our government, and $50 by an American to foreign governments, is enough. It is our sincere desire that the world should be a free field for mechanical invention and that all nations should encourage inventors.

the Smithsonian Institute.

To increase Knowledge.—It is proposed 1st, to stimulate men of talent, in every part of the country and of the world, to make original researches by offering suitable rewards : and 2d, to appropriate annually a portion of the income for particular researches, under the direction of suitable persons.

To diffuse Knowledge.—It is proposed, 1st, to publish a series of periodical reports on the progress of knowledge ; and 2d, to publish occasionally separate treatises on subjects of general interest.

No memoir, on subjects of physical science which does not form a positive addition to human knowledge, and all unverified speculations to be rejected.

Each memoir presented to the Institution to be submitted for axamination to a commission of persons of reputation for learning in the branch to which the article pertains, and to be accepted for publication, only in case the report of the commission is favorable.

The reports on the progress of knowledge, to be furnished by collaborators, consisting of men eminent in the different branches of knowledge. These reports to consist of three branches,—Physical—Moral and Political—Literature and the Fine Arts.

One half of the income of the Institution is to be devoted to carrying out this plan ; the other half to the increase and diffusion of knowledge by means of collections of books and objects of nature and art.

The building, which is slowly in progress, is to be erected, in considerable part, out of the interest which will accrue upon the interest, which has accumulated upon the original sum, since it has been in the keeping of the United States.

Opinions of the Press.

The publishers of the Scientific American will please discontinue the Nos. of their papers sent us, and retained them until ordered, as we wish, when we get them, to have them bound—they being entirely too valuable to entrust to the care of Cave Johnson.—*Steubenville, Ohio, Herald.*

The "Scientific American," we must again say, is an excellent scientific paper. It has now entered upon its third year, and is much improved in its appearance, general character and editorial department. We are in the receipt of duplicate copies of the American, which are at the service of any one who wishes to examine them.—*Western Dominion, Urbana, Ohio.*

We are much obliged to our contemporarie for their good opinions and flattering comments, and we shall endeavor always to deserve them. To our brother of the Western Dominion we would, in correction of an error regarding a scientific paper, say, that we can also show a journeyman's card fourteen years old.

American Institute.

Would it not be well for this Institute to apply some of its funds to the erection of a Mechanical Museum, the same as the Geological Museum in Albany. We need in this city, a Museum, containing, if possible, models of all patented machines. If the funds, $7000, were devoted to this purpose, an incalculable amount of benefit to our mechanics would be the result.

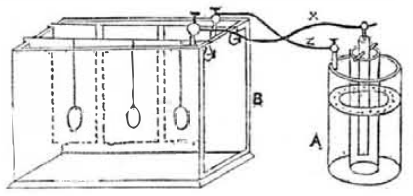
Carpet Factory.

The capet manufactory at Roxbury, Mass., hasbeenrecently purchased by Messrs. Henry Pettes & Co. of Boston. This is the largest factory of the kind in that state, except the Lowell. About one thousand yards of the different varieties of Three-ply, Kidderminster and Venitian carpeting are produced daily, which require two thousand pounds of raw wool. A very large addition to the original factory has been made, designed for the manufacture of Tapestry-Velvet and Tapestry-Brussels Carpets. These are a new style of goods, even in Europe, and as yet but very few have been made in this country. The whole process is kept entirely secret, and the workmen employed are English, who arrived in this country a short time ago. The Tapestry-Velvets have all the finish and beauty of painted velvets, and every description of pattern can be drawn upon them.

Electrotype and Electro-Gilding.

NO. V.

A great improvement was invented by Professor Jacobi of Russia, in what is called the Battery Apparatus. It consists in using a decomposition cell which we have described before, and using the constant voltaic pair of copper and zinc for generating. To the end of the wire attached to the copper is fastened a plate of copper and to the wire attached to the zinc the mould. The sheet of copper and the mould are placed face to face in the cell. The following cut will better explain this arrangement.



A, is a cell of Daniel's battery, with copper outside cell and plaster of Paris or porous earthenware inside cell, and amalgamated zinc rod, explained in No. 3. B, is the decomposition cell, filled with a solution of sulphate of copper, and a sheet of copper to furnish a decomposition supply, and also the moulds to receive the deposite. To charge this battery, pour in the several solutions, such as weak sulphuric acid in the inside cell of battery A, and sulphate of copper in the outside cell of it, and the sulphate of copper, not too strong, in the cell B. Hang a piece of copper on the brass rod which is fastened across B, and connect this rod by the thumb screw, observed in the cut to the wire Z, and then connect the other brass rod by the other thumb screw and the wire X, attached to the zinc rod in the inside plaster cell, and having done this, but not before, hang the moulds on the rod. For good deposites much depends on the solutions employed. In the cell B, or decomposition cell, much depends on the power employed regarding what solution should be used—2 of copper solution and 10 of water is about the best. Some have used advantageously a small quantity of glauber salts in the copper solution, by which means deposits of very malleable copper were had. By the glauber salts the solution appears to become more conductable—one sixth part of salts to the solution of the copper is a good mixture. By this process the copper from the solution is transferred to the moulds, by an action here tofore described, by the copper sheet being dissolved by the acid in the solution and by this means the strength of the solution for deposite is kept up. The time is a little longer by this method but the deposite is more firm and pliable at the same time.

The time required to finish an experiment depends much on the temperature. A medal may be done in a very few hours if the solutions are kept very warm. By this apparatus a number of copies may be taken and if two cells are connected together by being placed side by side and a bent copper wire dipping into each, a circuit for the passage of the voltaic current will be completed. This mode of proceeding may be extended to a number of copies at once, but no more than six cells should ever be used.

Yankee Enterprise.

Jeffries, the great British Reviewer, seems to have thought the Yankees were 'some.' It is said he once remarked that it was his firm belief that if a premium of a thousand dollars were offered for the best translation of the Greek Bible, it would be taken by a Yankee, who, till the offer was made, had never seen a word of Greek in his life. He would commence learning the language immediately ; to quality himself for the great undertaking, and would finish the whole work quicker than any other person, and bear off the premium.

Incendiarism.

A fulminating bomb lately exploded in front of the theatre, Historique, Paris, and as usual a number of bits of paper were immediately scattered about, which the crowd hastened to pick up. On each was printed, "Let us commit acts of incendiarism until there be no farther opposition to a just division of land and crops."

Hadley Falls.

A great deal has been said about the new manufacturing city of Lawrence, on the Merrimac, where "city lots" have advanced to 200 per cent above par, and mills and factories are going up by the dozen ; but another of those manufacturing cities at Hadley Falls on the Connecticut river, bids fair to throw even Lawrence into the shade. The water privilege is said to be the most valuable in the whole country. It includes the whole power to be obtained by damming the Connecticut river, and is of three times as many spindle power as that either of Lowell or Lawrence. This property was purchased some time since for a number of Boston capitalists who have subscribed two millions of dollars to the work as a beginning. They have purchased, besides the old dam and water power, a traet for a city on the west side of the river, two miles long, and extending back one mile from the river, situated on the railroad about midway between Springfield and Northampton One of the last sellers of the land to the company, after the plan begun to leak out, obtained $20,000 for twenty acres of land necessary to complete the site, which a year since he would have been glad to have sold for fifty dollars an acre. The company have already commenced the erection of a great and costly dam across the river, and are putting up buildings.—Their present capital is sufficient to construct factories with an aggregate of 50,000 spindles, and when that is exhausted, ten times as much more if necessary, will be forthcoming.

A Martyr of Science.

Science is evidently no joke in its experimental stages, and unless the pocket keeps pace with the inventive power, a "creative mind" may find itself in a pretty predicament. We observed, with much sympathy, in the papers the other day, the bankrupt of a savan, who had been spending ten pounds sterling per week in beef, for the purpose of trying experiments how it might be kept, and thus the inventive enthusiast, while theorising on the means by which meat might be kept, was showing a practical illustration of the art of losing money. If he had put his beef quietly in salt, like any one else, he would have kept himself out of a pretty pickle.

Professor Grant.

The Navy Department, duly appreciating the services of this gentleman in disinfecting the Frigate Raritan, has given proof of its desire to allow him every facility to carry on his experiments by sending him to Vera Cruz, where a wider field will be opened to him for testing the efficacy of his gases. If successful, there is no calculating the amount of good his invention will do the service in the saving of human life.

May God grant that the discovery of Dr. Grant may be the means of destroying the atmosphere of yellow fever in our southern cities.

Scientific American---Bound Volumes.

The second volume of the Scientific American, bound in a superb manner, containing 416 pages choice reading matter, a list of all the patents granted at the United States Patent Office during the year, and illustrated with over 300 beautiful descriptive engravings of new and improved machines, for sale at this office—Price $2,75. The volume may also be had in sheets, in suitable form for mailing—at $2.

THE
SCIENTIFIC AMERICAN.

Persons wishing to subscribe for this paper have only to enclose the amount in a letter directed (post paid) to

MUNN & COMPANY,

Publishers of the Scientific American, New York City

TERMS.—$2 a year; ONE DOLLAR IN ADVANCE—the remainder in 6 months.

Postmasters are respectfully requested to receive subscriptions for this Paper, to whom a discount of 25 per cent will be allowed.

Any person sending us 4 subscribers for 6 months, shall receive a copy of the paper for the same length of time

© 1847 SCIENTIFIC AMERICAN, INC

A Glance at the Heavens.

(Continued from our last.)

Sir William Herschel, whose researches into the arcana of the skies had met with so many satisfactory results, was foiled by the obstinacy with which these nebula resisted all attempts at disentanglement, and, after much reflection, he conceived by hypothesis that these irresolvable milky spots were not galaxies of stars, but a collection of self-luminous matter in different stages of condensation, out of which, in process of time, stars would be formed. His daring notion was, that these were *worlds in the act of formation*. The attraction of particle for particle would, in the end, overcome the centrifugal force which would pervade them, in case they were whirling round like matter nearer us, or it might be the repulsion which to some extent kept the atoms apart, and then, in place of a dim. speck, we should see a bright point. The power and value of Lord Rosse's telescope is here manifested. When that new optic glass was elevated, and the rays which fell upon a surface of six feet in diameter, were collected into one focus, Herschel's hypothesis crumbled away and the mystery was revealed—*these nebula also, were masses of stars*, withdrawn far away into the depths of space, and forming starry systems of their own, new heavens and new earths. It is in vain for the imagination to feel the full extent ot the grandness thus unfolded; it is in vain that our thoughts grope just below the surface of that vast depth into which we are now looking with the notion that they reach the objects they perceive there. We have no means of measuring for the mind the enormous distances which a line of figures will express, and the difficulty is not got rid of when we attempt to measure the space by the rapidity of light, and say that MILLIONS of YEARS are occupied in the journey of a ray from these remote regions to this earth. Reader! side by side with this fact, place this—there is a species of earth, which is made up of shells, once inhabited by animals, so minute that a cubic inch contains forty thousand millions of shells. Between a gallionell and a nebula how vast the contrast—how vast the interspace measured in a gallionell!

Herschel's hypothesis then we have seen was baseless, but honor attend him for his labours. He it was who first "cast a plumb line into the depths of space" and determined with more or less accuracy the form and boundary of the cluster of which our sun is one star. That cluster is conjectured to be in shape like "a flat circular zone or thin slice of a sphere" "our stratum of stars (says Humboldt), a disc of relatively modern thickness, is divided through one third of its whole extent into two arms; and it is thought that we are placed somewhat near to this division, nearer to Sirius, than to the constellation of the Eagle, almost in the middle of the interior extension of the layer, in the line of its thickness or lesser axis." The length of this bed of stars is estimated to be from seven to eight hundred and the breadth at one hundred and fifty distances of Sirius, from which star light would certainly not be less than three years in arriving here. The more readily to conceive the supposed configuration of our bed of stars, take a round convex lens of thick glass, with the edge not sharp, but ground into a measurable breadth. Our position is towards the middle, but the matter of which the lens is composed must be understood to be stars. It is evident, then, that if we look from that central point in directions perpendicular to the length of the lens, our vision in its penetrating into the depths of space would be interrupted by less glass (that is with fewer stars) than if we looked towards the edges, or in a direction parallel with the length. Just so it is with ourselves and the heavens about us. When we look upon the milky way, "a blended lustre of multitudes of orbs" we are looking along the thickest portion of our stellar universe, and when we look in other directions, the stars glitter from each other with large spaces between, because they are not ranged in files beyond files, visible to our naked eye so as to shine with an accumulated light. It has been remarked that if our planetary system were placed outside the cluster in which it is suspended, the milky way would appear like a vast ring, and if we were removed to a greater distance, it would present itself as a disc-shaped nebula. Singular to relate, astronomers have found in one corner a nebula which they tell us is shaped as near as possible like our stratum of orbs, as if it were a reflection in the vast depths of space, of an object placed at an incalculable distance.

(To be continued.)

Quicksilver Mines in Austria.

The quicksilver mines in Idria are most interesting, and demands a particular description, as they have been celebrated in natural history, poetry, and romance,. The ban of Idria is a district immediately subject to the Chamber of Inner Austria, and lies westward of Carniola. The town, which is small, is situated in a deep valley, amid high mountains, on the river of the same name, and at the bottom of so steep a descent, that its approach is a task of great difficulty, and sometimes of danger.

The mines were discovered in 1497, before which time that part of the country was inhabited by a few coopers only, and other artificers in wood, with which the territory abounds. One evening a cooper having placed a new tub under a dropping spring, to try if it would hold water, found it so heavy that he could scarcely move it. He at first was led by his superstition to suspect that the tub was bewitched; but perceiving at length a shining fluid at the bottom, with the nature of which he was unacquainted, he collected it, and proceeded to an apothecary at Laubach, who, being an artful man, dismissed him with little recompense, requesting that he would not fail to bring him further supplies.

The subterraneous passages of the great mine are so extensive, that it would require several hours to pass through them. The greatest perpendicular height computing from the entrance of the shaft, is 840 feet; but as these passages advance horizontally under a high mountain, the bucket is liable to strike against the sides, or to be stopped by some obstacle, so that it may be readily overset. A second of descending is safer, by means of a great number of laddders placed obliquely, in a kind of zig-zag; as the ladders, however, are wet and narrow, a person must be very cautious how he steps to prevent falling. In the course of the descent, there are several resting places, which are extremely welcome to the wearied traveller. In some of the subterraneous passages the heat is so intense, as to occasion a profuse sweat; and in several shafts the air was so confined, that several miners were suffocated by an igneous vapor, or gaseous exhalation, called the fire-damp. This has been prevented by sinking the main shaft deeper. Near to it is a large wheel, and an hydraulic machine, by which the mine is cleared of water.

Mr. Deshong.

The New York Courier cautions the public against sending Mr. Deshong $10 for his printed rules for enumerating, and dividing and sub-dividing figures. It says its editors had witnessed Mr. D.'s powers of reckoning, which were indeed remarkable; that he had promised to instruct them in the art; and gave them his rules; but they say: "After as full and careful an investigation as he enabled us to make, we came to the conclusion that they were unsatisfactory and fallacious; some of them were false; others complicated; and none of them at all adequate to the results promised. Mr. Deshong, so far as our knowledge goes, and to the best of our belief, has no system of reckoning which he can impart to others, of any essential utility."

We wash our hands free of having published Mr. Deshong's letter inviting people to send him $10 and he would furnish them with his rules of calculation which would learn any person to calculate as well as himself in half an hour. With our usual caution, we wished first to investigate his system and in doing so, we have found it full of rottenness.

John Smith.

If the person of this name, who was known to be living in or near London, about 1842, will apply to Mr. Brown, of London, will hear of something to his advantage.

Journal of a Queen.

Those dames who despise labor and look upon it as a mark of degradation, we hope will be satisfied to think that, however much honor may belong to clean hands, there is more satisfaction in buoyant health, exercise and ruby cheeks The following is part of the Journal of Elizabeth Woodvin the beautiful wife of Edward the Fourth. It was her brother whom the ladies of England chose for the flower of chivalry and then champion to meet the brother of Charles the Bold of Burgundy, in combat, and he was successful.

Monday morning—Rose at 4 o'clock, and helped Catharine to milk the cows. 6 o'clock—breakfasted. 7 o'clock, went out with Lady Duchess my mother, in the court yard; fed five and thirty men and women, and chid Roger very severely for expressing some dissatisfaction on attending us with the broken meat. 10 o'clock.—Went to dinner—John Gray, one of our visitants, a most comely youth—but what's that to me. A virtuous maiden should always be under the direction of her parents. John eat but little—stole a great many tender looks at me. 3 o'clock—Poor farmer Robinson's house burnt down by an accidental fire. John Gray proposed a subscription among the company for the farmer's relief, and gave no less than five pounds himself to this benevolent intention. Memorandum.—Never saw him look so comely as at that moment. 5 o'clock—went to prayers. 6 o'clock—fed the poultry. 7 o'clock—supper on the table. Delayed to that very late hour on account ot poor farmer Robinson's misfortune.

Decoration of the House of Lords.

The Commissioners of Fine Arts have issued their seventh report upon the decorations of the palace at Westminster. They express themselves well satisfied with the result of the competition among the artists in oil colors, whose works are now exhibited. The frescoes in the House of Lords will soon be completed, and the statues of Hampden, Lord Falkland, and Lord Clarendon, are in a forward state. The Commissioners recommend that statues of eighteen barons and prelates should be cast in metal, to occupy the niches in the House of Lords; and that £2,700 be expended in models. The Commissioners further present, with their approval, the report of a select committee charged to consider a complete scheme of decoration, with the object of maintaining a character of harmony and unity throughout the building.

Mr. Bremner, the engineer. who brought off the *Great Britain*, had previously succeeded in raising upwards of two hundred vessels. In September, 1843, he lifted the ship *Uncertain*, which run on shore at Broad Bay in the Island of Lewis, with a cargo ot coals The weight then raised was 1,100 tons, and the vessel had been two years on the beach. Mr. Bremner entered upon his arduous labors at Dundrum Bay without any specific agreement as to remuneration. He found great assistance in the energy of his son Alexander.

Mr. Bremner is a practical mechanic and a native of the north of Scotland.

Wolf killed by an Irishman.

Nicholas Whalen, of Lochbora township, Canada, went out on the fine morning of the 27th of September and found a large he-wolf amid his pigs and geese. The baste sprung at Paddy and Paddy sprung at the baste, and he licked it cleanly by holding it by the ears until its head was cut off by a young man who came to his assistance. Whalen was dreadfully wounded by the savage animal, but he would'nt say beat, until the wolf fell.

A sheep of the Cheviot breed was clipped at Southerland, recently, the fleece of which was found to weigh nineteeen and a half imperial pounds.

It is stated that the number of emigrants to Canada who have died, in three months, on shipboard or after they were landed, is seven thousand one hundred and forty.

An eminent physician has discovered that the night-mare, in nine cases out of ten, is produced by "owing a bill for a newspaper."

Progress of America.

What a change has the progress of civilization effected on this vast continent during the last two centuries, and what a glorious change to the enlightened mind. A few years ago and the majestic forest spread its wing far and wide, and the Indian was monarch of all he surveyed, traversing its wilds with his spear, or navigating its lakes with his bark canoe. But mark the change!—What was once gloomy forests is now beautiful villages and gallant cities, teeming with industrious and intelligent inhabitants, a people are administering to the wants of the mother country and opening their arms to the industrious emigrant, saying, come and enjoy our blessings and freedom. Our railroads, canals and works of art are beginning to astonish the world, and our successful invention of the Telegraph proclaims the ingenuity of the American mind, and we are running a career, a glorious career, because it is a scientific career, with our mother on the other side of the Atlantic. Our vast prairies are now becoming thrifty farms, and the produce of every climate smiles upon our shores. The application of steam to various purposes has produced wonderful results. America and England are now within a twelve day's voyage, and China will in fifty years be as comparatively near us as England now is, and the whole world will yet be neighbors to each other. The principle, a broad comprehensive principle, has gone forth to fraternize the world. The credit of this belongs in a great measure to a few settlers who fled from persecution to this land, which is an assylum for the misgoverned of principalities, and there is deep in working in the hearts of all men at present both in this and other countries for a greater elevation, more especially among the masses of Europe.

History is useful only so far as we are guided by a knowledge of past experience. To those who are united for a good purpose, we would say if you wish to be successful, look to the constancy of Washington who led his bands of suffering patriots through innumerable perils to a glorious termination, and while we look upon other portions of the earth slumbering in gross darkness and debased in crime, let us never forget that it is to an Education wisely and liberally provided for our people, that America owes her proud superiority and it is to a suitable education, free and full and virtuous that a love of freedom and a detestation of oppression will be preserved pure and unadulterated in future generations. G. W. V. V.

Salina, Oct. 20, 1847.

Louis Phillipe,, the King of the French, is reputed to be worth one hundred and fifty millions of dollars. Sir Robert Peel is said to possess an estate valued at ninety millions of dollars. And the valuation of John Jacob Astor's possessions is thirty millions of dollars.

Notwithstanding all their wealth, there is not a young man in the country, of sound sense, that would change conditions with either of them.

The French monarch has lived three-quarters of a century, but old as he is, he dare not take the air in his own capital, without calling up fifty thousand soldiers to guard the streets through which he may ride. The labor which he performs would render any man a slave; although the work which he has performed, and the keen foresight he has exercised, would have given any man wealth and distinction. Sir Robert Peel is the son of a cotton spinner, and he is one ot the mental giants in the world. The load of care that he bears about, would crush an army of common men. He is but sixty years of age, and is likely to do England much good service yet.—Mr Astor is now in his second childhood, and in a very feeble state of health.

Legal Talents.

A person looking over the catalogue of professional gentlemen at the bar, with his pencil wrote against the name of one who is of the bustling order; "Has been accused of possessing talents;" another, seeing the accusation, wrote under the charge, "Has been tried and acquitted."

© 1847 SCIENTIFIC AMERICAN, INC

TO CORRESPONDENTS.

"D. H. P. of Mass."—We are not yet able to give you the name and place where the London Organic Vibrators are to be had.

"R. V. L. of N. Y."—An Inventor's Institute is just the thing universally desired by inventors, but we are yet to learn of any real advantage to a single poor inventor derived from any association of this kind that has been established, or ever will be established upon any principle yet advanced.

"J. R. I. of Conn."—Your model has been received, but it is defective, and the defects must be remedied. If possible, neat and operative models should always be made. It is very uninventive like to see a bungling model of any machine. You have mechanics who can make good models, why not have one then?

"R. A. of Ohio."—The Mechanics' Journal will expire in four more numbers, and those of its present subscribers who desire to subscribe for the Scientific American can forward their subscriptions the week before the Journal expires. It would be well if some of its subscribers in justice to the former publishers, would remember the old doctrine "owe no man any thing." We shall notice this again.

"J. R. of Boston."—Your remarks about the Fair of the Institute, we cannot publish in their present form. If you remodel the arrangement and useless asperities in language, we may comply with your request. Your views are just the same as those of many others.

"W. J. T. of Maine."—No matter what difficulties may arise, we bid you go on in your enterprise. If you can use an eccentric in the place of your crank, do so by all means.

"J. R. of N. Y."—No good can come out of bringing individual grievances before Protections. We have refrained from this (although having some explanations to make,) merely because we know that all will yet end well.

"J. W. V. of Pa"—Your letter with a drawing has been received, and we shall give it due attention.

"L. S. of Vt."—It is not possible to judge correctly of your invention by the description and drawing which you have sent. If you mean to convey the idea that in all circumstances when the wheel and crank can be equally employed, we must say that we entirely differ in opinion.

"J. J. R. of Mich."—We shall attend to your claims next week.

"J. E. H. of Auburn, N. Y."—We have not been able to procure a copy of the *Mechanique Celeste* in the city. The Philosophical Magazine is nine dollars per annum. It is a monthly publication, and has to be specially ordered. Address this office.

"R. W. C. of Mass."—Your invention is a good one and should be immediately applied to a practical purpose.

"J. W. of N. Y."—You may judge if there is not a great bungling loss in our Gas Works, when you see it escaping out of the chimney. You may say that flame and smoke are not gases. Well what are they then? Economy in burning the coke, we suppose.

Columbian for November.

This splendid monthly has again made its appearance, and is one of the richest numbers we have ever seen. The Columbian has a wide circulation and is one of the best periodicals, published in America. Ormsby & Hacket-116 Fulton street, publishers.

The Causes and Effects of Explosions in Steam Engines Investigated.

This is the title of a pamphlet by John Wilder, and published by John S. Taylor, 151 Nassau st. It is an able document and we sincerely recommend it to the attention of all engineers and those engaged in scientific pursuits. It displays much collective research and judgment. We shall notice it more at length at some future period.

Explosion of Fire-Damp and Death.

Mr. Isaac Rich, one of the proprietors of the mines of that name, at Pottsville, was instantly Killed on the 23rd ult., by an explosion of fire-damp. He was at the time in the breastwork of the mine, making observations of the progress of the work, when an explosion took place and precipitated his body into the excavations below.

Patent Agency.

Applications for Patents made at this office, on the most reasonable terms. Neat drawings, specifications, and engravings of the first character, and cheaper than anywhere else. Notices of new inventions, Agency for the sale of Patent Rights, and all business of that nature, promptly attended to. Those who have patent rights to dispose of will find a good opportunity and field for their sale—such as Horse Power Machines and Waterwheels of every description. The largest circulation in the world for advertisements of inventions, &c.

A Patent Right.

A great opportunity is presented to any person or persons who wish to make a profitable investment in the purchase of a patent right for the United States. The patent is for Rabbeth's Patent American Elastic Safety Pins for Shawls and Diapers. The manufacturer of these employs no less than 16 hands and there are more orders than can be supplied, and good profits are made. The article, too, is just beginning to be known and there can be no doubt of an increased sale. The patent is dated 21st January, 1847. The patentee is desirous of retiring from business It takes but little capital to commence the manufacture. Terms made known by enquiry post paid, at this office.

It is said that eight hundred pounds of gold is annually made up into gold pens in the United States.

Advertisements.

☞ THIS paper circulates in every State in the Union, and is seen principally by mechanics and manufacturers. Hence it may be considered the best medium of advertising, for those who import or manufacture machinery, mechanics tools, or such wares and materials as are generally used by those classes. The few advertisements in this paper are regarded with much more attention than those in closely printed dailies.

Advertisements are inserted in this paper at the ollowing rates:

One square of eight lines one insertion,	$ 0 50
" " " " two do.,	75
" " " " three do.,	1 00
" " " " one month,	1 25
" " " " three do.,	3 75
" " " " six do.,	7 50
" " " " twelve do.,	15 00

TERMS:—CASH IN ADVANCE.

GENERAL AGENTS
FOR THE SCIENTIFIC AMERICAN.

New York City,	Geo. Dexter.
Boston,	Messrs. Hotchkiss & Co.
Philadelphia,	Stokes & Brother.

LOCAL AGENTS.

Albany,	Peter Cook.
Baltimore, Md.,	S. Sands.
Cabotville, Mass.,	E. F. Brown.
Concord, N. H.	Rufus Merrell.
Fall River, Mass.	Pope & Chase
Hartford, Ct.,	E. H. Bowers.
Jamestown, N. Y.	E. Bishop.
Lynn, Mass,	J. E. F. Marsh.
Middletown, Ct.,	Wm. Woodward
Norwich, Ct.,	Safford & Parks.
New Haven, Ct.,	E. Downes.
New Bedford, Mass.,	Robinson, Parsons & Co.
Newark, N. J.,	J. L. Agens.
Newark, N. J	Robert Kashaw.
Providence, R. I.,	H. & J. S. Rowe.
Rochester, N. Y.	D. M. Dewey.
Springfield, Mass.,	Wm. B. Brocket.
Salem, Mass.,	L. Chandler.
Saco, Me.,	Isaac Crooker.
Savannah, Geo	John Caruthers.
Troy, N. Y.,	A. Smith.
Taunton, Mass.,	W. P. Seaver.
Williamsburgh,	J. C. Gander.
Dover, N. H.	D. L. Norris.

CITY CARRIERS.

Clark Selleck, Squire Selleck.

Persons residing in the city or Brooklyn, can have the paper left at their residences regularly, by sending their address to the office, 128 Fulton st., 2d floor.

To Painters and Manufacturers

FOR SALE.—The Chemical Prepared Dryer—the Chemical Prepared Gold Size.—also the Chemical Prepared Cement Paint. This paint is recommended as the most durable and the most effective in rendering roofs tight, than any paint hitherto used for that purpose. It is also less combustible.

The above compounds are thoroughly tested before they are offered to the public.

QUARTERMAN & SON,
House Painters, Grainers, &c.
n6 3m 18 Burling Slip, New York.

WOOD CUTS.

☞ We would inform Newspaper and Periodical publishers that we have on hand a large lot of Wood Engravings, which have been used in the Scientific American during the past year, which we are desirous of disposing of cheap. They are in fine order and may be had at one fourth of their original cost. Publishers of country papers would find it to their interest to avail themselves of this chance to illustrate their publications at a cheap rate.

Address at this Office. s18 tf

MAGNIFICENT PORTRAIT
OF
MAJ. GEN. ZACH. TAYLOR.

The undersigned have just issued a magnificent likeness of GENERAL TAYLOR, drawn from life and engraved in the most costly manner, which is now for sale at the extremely low price of

Six cents per copy.

A LIBERAL DISCOUNT TO THE TRADE.

☞ *This likeness is warranted to be the most perfect of any which has yet been published, and the only reason for offering it at so low a price is to insure the sale of an immense quantity.*

The Portrait is encircled by a beautiful wreath, adorned and surmounded with appropriate designs.

Any person enclosing QUARTER OF A DOLLAR in a letter, shall receive four copies by mail. Ten copies for fifty cents; Twenty-five copies for one dollar. Letters must be directed (post paid) to

MUNN & CO.
Publishers of the Scientific American,
New York City.

☞ OBSERVE—As this is the only true likeness issued, it may be known from all others by having the words "Published by Munn & Co. at the office of the Scientific American, New York,"—printed on the lower part. s4

THE BEST YET!

JUST PUBLISHED,
THE
Great Mammoth
PICTORIAL SUN,
A Christmas and New Yew Year's Gift for 1847-8.

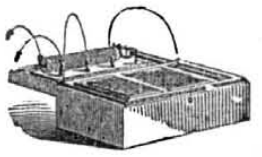
☞ This Pictorial is on one single sheet of paper comprising two thousand four hundred and thirty six square inches, covered on both sides with beautiful engravings and interesting reading. It is the largest and best Pictorial ever published in New York.

Single Copies 12 1-2 Cents.
Ten Copies for $1,00.

Persons in the country who wish for single copies have only to enclose a 12 1-2 cent piece in a letter, or by clubbing together can receive ten copies for one dollar. The letters must in all cases come POST PAID, and directed to

M. Y. BEACH & SONS,
o30 Sun Establishment, New York.

REMARKABLE CASE OF FITS CURED.



Dr. Smith's Torpedo Magnetic Machine.

☞ The following is an extract of a letter from Dr. William Miller, No. 317 Broome st., New York.

Dr. S. B. Smith—Sir: To show the superior efficacy of Electro-Magnetic treatment over every other, I will give you a case of Fits that I completely cured in two operations by the above process:—

A Mrs. Abrahams near Nyack, in Rockland Co., N. Y., came to me on the morning of March 13, 1846, with a child about 4 years old, who had for many months had fits regularly every day at 2 o'clock and 6 o'clock, P. M. The intellect of the child showed symptoms of decay from their frequency and severity. After the first operation the lady left for her boarding place, in full confidence that a cure was already effected, although I assured her it was not possible that one application could suffice. The next morning I found her waiting upon my office steps eager to inform me that both two and six o'clock of the afternoon passed without a return of the fits, and that she felt confident the child was cured. I bade her bring the child in and submit it another operation. She did so, and to this date the child has remained well. The cure was effected solely by the Electro Magnetic treatment, no other medicine whatever being given. I might give you many other cases where the cure has been perfect by a more lengthy treatment WM. MILLER,
August 19, 1847. 317 Broome st., N. Y.

A manual with full directions, accompanies each machine, which is warranted for 20 years, put up in elegant rosewood and zebra wood cases, 9 inches long, 5 1-2 inches wide and 5 high—Price $12.

Orders from any part of the United States promptly attended to. Address
o2 tf MUNN & CO. (post paid) New York.

To Machinists, Carpenters and others.

MR. WM. A. ASHE, Professor of Mechanical and Architectural Drawing has opened Evening Classes for the purpose of giving instructions in **Architectural and Mechanical Drawings,** in all their branches, from the first use of the instruments to the highly finished and beautifully shaded drawing, suitable for framing or the Patent Office.

W. A. ASHE'S Drawings have gained him many prizes in several Mechanics' Institutions in Europe, and great reputation in the Patent Office, Washington, and the Mechanics' Institute, Brooklyn, (where he was a teacher for two years,) and among the various Patent Agents of this city. As the classes will be limited, an early application will be necessary to insure admittance.

For terms and particulars, apply to W. A. Ashe, at his establishment, 133 Fulton street, opposite the Sun Buildings. o30 1m

Engraving on Wood

NEATLY AND PROMPTLY EXECUTED AT the Office of the Scientific American, 128 Fulton st, three doors from the Sun Office. Designs DRAWINGS of all kinds for PATENTS, &c., also made as above, at very low charges,

Ballard's Improved Jack Screw.
PATENTED.

THE advantages of this Screw for Stone Quarries. Railroads, Steam-boiler Builders, and for other purposes, are superior to any other similar machine.

The improvement consists in being able to use either end of the screw, as occasion requires.

It is capable of raising the heaviest Locomotive with ease, being portable, strong and powerful, and not likely to get out of order.

Many Railroad Companies and Boiler makers have them in use, by whom they are highly recommended.

JACK SCREWS,
Of various sizes, power and price, constantly on hand at the manufactory,
No. 7 Eldridge street, near Division.
o16

Proposals for Carrying the Magnetic Telegraph across the Hudson River.

☞ The undersigned are prepared to receive proposals for extending the wires of the Magnetic Telegraph Co. over the Hudson River, at some point as near the city of New York as practicable

Proposals will be received until the tenth day of November next, and all necessary information can be obtained on application by letter or otherwise, to either of the nndersigned.

B. B. FRENCH, Washington City.
JOHN W. NORTON, 23 South st. New York.
THOS. M. CLARK, 90 South st. New York.
o23 tf

PATENT AGENCY AT WASHINGTON.
ZENAS C. ROBBINS,
Mechanical Engineer and Agent for procuring Patents.

WILL prepare the necessary Drawings and Papers for applicants for Patents, and transact all other business in the line of his profession at the Patent Office. He can be consulted on all questions relating to the Patent Laws and decisions in the United States or Europe. Persons at a distance desirous of having examinations made at the Patent Office, prior to making application for a patent, may forward (post paid, enclosing a fee of five dollars) a clear statement of their case, when immediate attention will be given to it, and all the information that could be obtained by a visit of the applicant in person, promptly communicated. All letters on business must be post paid, and contain a suitable fee, where a written opinion is required.

Office on F street opposite Patent Office.

He has the honor of referring, by permission, to Hon. Edmund Burke, Com. of Patents; Hon. H. L Ellsworth, late do; H. Knowles, Machinist, Patent Office; Judge Cranch, Washington, D. C.; Hon. R. Choate, Mass., U. S. Senate; Hon. W. Allen, Ohio, do; Hon. J. B. Bowlin, M. C. Missouri, Hon. Willis Hall, New York; Hon. Robert Smith, M. C. Illinois; Hon. S. Breese, U. S. Senate; Hon. J. H. Relfe, M. C. Missouri; Capt. H. M. Shreve, Missouri. j23

GENERAL PATENT AGENCY.
REMOVED.

THE SUBSCRIBER has removed his Patent Agency from 12 Platt to 189 Water street.

The object of this Agency is to enable Inventors to realize something for their inventions, either by the sale of Patent Goods or Patent Rights.

Charges moderate, and no charge will be made until the inventor realizes something from his invention.

Letters Patent will be secured upon moderate terms. Applications can be made to the undersigned, personally or by letter post paid.
m8 3m* SAMUEL C. HILLS, Patent Agent.

Johnson's Improved Shingle Machine.

THE Subscriber having received Letters Patent for an improvement in the Shingle Machine, is now ready to furnish them at short notice, and he would request all those who want a good machine for sawing shingles, to call on him and examine the improvements he has made, as one eighth more shingles can be sawed in the same given time than by any other machine now in use.

Augusta, Maine, Oct. 1, 1847. J. G. JOHNSON.

Machinists Tools.

THE Subscriber is now manufacturing a superior article of Large Turning and Screw Cutting Lathes, Drilling Machines, &c. to which he would respectfully call the attention of Machinists and others requiring the above articles. Also, Machinery of every description, manufactured to order, at 42 Gold street, New York. G. B HARTSON. o2 1m*

DAUGERRIAN GALLERY.
GURNEY'S
PREMIUM DAUGERRIAN GALLERY.
No. 189 Broadway, N. Y.

☞ Pictures taken at this establishment warranted to give satisfaction. j24

Veni! Vidi! Emi!

☞ THIS IS THE MOTTO OF ALL THOSE THAT HAVE EXAMINED KNOX'S NEW FALL STYLE OF HATS, with a view of buying—
I CAME! I SAW! I BOUGHT!

His BON TON Establishment (as all know) is at 128 Fulton street. s18 3m

AGRICULTURAL TOOLS.

INVENTORS and Makers of superior Agricultural Implements are notified that the subscriber will sell such articles on commission; and make prompt returns. SAMUEL C. HILLS,
m8 3m* 189 Water st.

AMERICAN HARDWARE.

THE SUBSCRIBER having been engaged in selling American Hardware on commission for 7 years, solicits consignments from manufacturers, and will refer to those who have employed him the above number of years. SAMUEL C. HILLS,
m8 3m* 189 Water st.

Lap-welded Wrought Iron Tubes
FOR TUBULAR BOILERS,

From 1 1-4 to 6 inches diameter, and any length, not exceeding 17 feet.

THESE Tubes are of the same quality and manufacture as those extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER, Patentee,
d26 28 Platt street, New York

© 1847 SCIENTIFIC AMERICAN, INC

The Art of Cameo Engraving.

The art of cutting Cameos, is a species of sculpture, rather than engraving. There are two sorts of cameos, one of which is stone of different colored strata, so that the raised figure is of a different color from the ground.—The other is of the conch shell, of which lime is the basis. The shells are sawed in squares with saws of soft iron, similar to those used by sculptors. After the shells are cut into suitable pieces they are ground on a stone to their required shapes, by grinding them nicely on the edges and leaving them thick in the middle. After this they must be cemented on a stick about 6 or 7 inches long, with cement of Burgundy pitch and rosin of equal parts heated together until they are perfectly amalgamated. The end of the stick is immersed in the cement while it is warm and enough attaches itself to it to fasten the shell which must also be slightly warmed or the two will not be attached. After all are cool, the shell is ready for cutting. To cut a likeness, the best way for correctness is to cut the profile on paper, lay it on the shell and trace it out.—The best steel gravers, the harder the better, are alone fit for this work and they are ground down to different shaped points, some diamond, some oval, some chisel shaped and some round. After the likeness or design is traced on the shell it has to be blocked out with hand, or it might be done by flat drills in a lathe, which would be a great improvement for speed over the common way. The blocking out is done by tracing the design with the diamond pointed graver, and leaving the pencilling distinct and cutting away all the outside with chisels and gouges, taking care to leave the groundwork thick enough to finish up, as we call it. After the blocking out is completed, we begin with the top of the profession in making the head by leaving a space for the hair a little raised and then engraving, very carefully, the features, taking great pains not to do too much at a cut, for if once spoiled there is no remedy. The neck and breast are done next, as cautiously as the face. The hair is done last and is the most difficult part to perform although the uninitiated would think it the simplest, but it is the most delicate work of all, for no matter how good the rest of the work may be, if the hair is poorly executed, the whole figure looks bad. In cutting the hair it must be gracefully curled with delicate curves, like Hogarth's bounding line of beauty. Sculptured heads are the best models for the learner to study and figures of statuary the best guide.

After the figure or design is finished with the graver, the cameo is polished with pumice stone as smooth as possible, until all the marks of the graver disappear. It is then finished with a stiff tooth brush and potter's clay or whiting and water and afterwards washed in pure water, when it will be observed to have that beautiful polish for which cameos are so justly admired and which has lately made them on account of their chasteness of coloring a very popular branch of American and foreign jewelry.

To take the cameo off the stick after it is finished, it is necessary to heat the stick over a spirit lamp until the cement warms, when it is easily taken off and is ready for framing.

It may be observed that the grace of a figure depends much on the drapery, the Roman and Grecian are the most beautiful and I universally use the Roman, bound to the shoulder by a small rosette. S. C.

Albany, N. Y

Aromatic Beer.

Take 20 drops of the spruce, 20 drops wintergreen, 20 drops sassafras. Pour two quarts of boiling water, upon the oils, than add 8 quarts of cold water, one and a quarter of yeast. Let it stand two hours and then bottle it.

Arts and Sciences of China.

The Chinese are a strange people, hid from the rest of the world for thousands of years.—Many strange tales have been told respecting the arts and sciences of that people. By recent investigations, more especially in the ancient books of China, a vast field has been opened to the modern historian, of the ancient history of that country. In a late number of the London Repository of Arts and Sciences, we find an account of a strange pamphlet read before the Paris Academie of Science by M Julien, who extracted the same from Chinese books. It would appear that Kites were invented before the Christian era 206 years, and used by an Emperor to convey intelligence to a beseiged city,, and also to measure distances. It also appears that iron ships were common 169 B. C.. and in the district of Ngan-ting there still exists a copper ship made 2400 years ago, and it was not uncommon then to construct boats of sheet copper.

The Chinese were acquainted with the art of raising silk 1100 years B. C., and the Compass at least 400 years and paper and ink and writing 200 years B. C. They were acquainted with printing by wooden blocks A. D. 504, and with moveable types 1049 ; Porcelain in the same century ; boring wells and the use of gas, suspension bridges, fire engines and paper money in the eleventh and twelfth centuries.

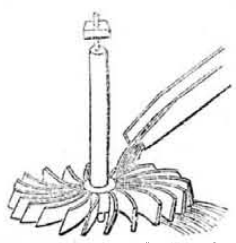
In medicine, they treat with success many disorders which have hitherto been deemed incurable in Europe. They are also acquainted with the art of dyeing the whole pilatory system, and thus imparting to red or fair hair a black hue, which will last until it is turned grey or falls off from age. M. Imbert, who is now a bishop in China, offers (according to Abbe Voisin, one of the directors of foreign missionaries,) a living proof of this internal coloring of the hair. This is the reason why the Chinese people have, from the earliest ages, been called the " dark haired nation."

As regards agriculture, they obtain, by means of manures and other means, regular results, which suffice to feed three hundred and sixty millions of men, provided they are not visited by storms or other natural calamities. In horticulture, they are acquainted with the art of changing the colors of flowers ; also of forcing flowers and fruits, and producing from dwarf trees as fine fruit as that generally obtained from large trees ; in fact, they seem to be possessed of the power of producing in the vegetable kingdom phenomena which would be regarded in these countries with admiration and pleasure.

It is very probable that, in order to meet the requirements of the arts, and keep up with the progress of civilization, modern genius will discover, during many future ages, after long continued efforts and experiments, a multitude of useful inventions which were previously known by the Chinese, but which are hidden in their books

MECHANICAL MOVEMENTS.

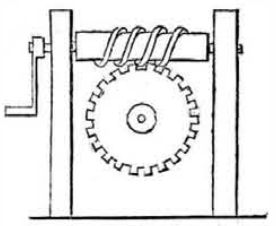
Reaction Water Wheel.



This term is applied to all wheels which receive their water in one direction and discharge it in an opposite direction. The above cut represents a wheel with curved vanes or buckets, receiving its water by a spout at the centre, which rushing to the circumference and discharging there, gives motion to the wheel. There are some, however, which discharge at the centre. The information respecting reaction water wheels is very limited, at least general knowledge, and there is no work on hydraulics but what skips the subject with a barren notice. In fact, there is perhaps but one man in the United States who has fully explored the whole field of the effect and constructive theory of this class of wheels, that man is the original patentee of the first patented reaction water wheel in this country. Scribner mentions Calvin Wing as having secured a patent in 1830, but there was a patent secured in 1829 by Mr. Parker, of Ohio, the first we believe ever taken out for a horizontal water wheel in America. By a set of experiments which are in our possession. we have decided testimony that some reaction wheels have had an effective power of 72 per cent, and others averaging 63 per cent, 15 per cent advantage more than was ever supposed could be gained, by those who have not given their attention to practical, instead of wrong theoretical effect. The tub wheel has been known for two hundred years, but it never was any thing better than an undershot wheel, and it was not until the United States drew attention to the subject that Fournyron of France and Whitlaw and Stirrit, of Scotland, improved upon the old turbine.

No less than 26 patents have been taken out in the United States for reaction water wheels and improvements on them, yet in no work on water wheels, is there the least data for the millwright to be guided in the particular size, according to the volume and velocity of the stream on which he wishes to erect a reaction wheel. We have often regretted to see the name of the original patentee omitted in any published accounts except in the Franklin Journal. At some future period, we will call attention to this subject and present some statistics which will effectually prove the superlative value of the horizontal wheels as applied to all situations under 12 feet fall.

Reduction of Speed.



There are many ways of reducing the speed of wheels. The small prime mover and the secondary large mover, are well known means to effect this end. Yet not by wheels, or bands alone may this end be effected, Every mechanic knows the manner represented in the above cut of transferring speed, and he knows too, that the circular motion of the screw transferred to the worm wheel is one of the most efficient modes of reducing speed.—It is also one of the most simple means of doing so, and has been most ingeniously applied for that purpose by Mr. W. M. Haines, of Rochester, in his Mechanical Calculator.

Philosopher's Lamp.

Put into a common bottle some clean iron filings and 1 part of sulphuric acid to six of water and cork it with a cork having a glass tube, or with the stalk of a tobacco pipe introduced about half an inch through it and about eight inches above it outside. In a short time the gas will rush from the top of the pipe when if a light is applied it will burn with a bluish flame. Care must be taken not to apply the light until all the common air has escaped, as it would along with the oxygen explode violently and blow the bottle to pieces.

Philosophical Trumpet.

Take a tube from two to three feet in length and about three inches wide and open at both ends. Bring it down slowly over the Philosopher's Lamp, and soft pleasing sounds resembling those of an Æolian Harp will be heard and by raising and depressing the tube gradually over the flame, the musical chord may be greatly varied.

Asthma.

The Newark Daily Advertiser, pledges itself to cure this distressing disease with the following simple remedy. Take 1½ oz. sulphur, 1 oz. senna, ½ oz. annis-seed, pulverize and thoroughly mix the same, and take one tea spoonful in about two table spoonsful of molasses on going to bed, or at such times times through the day as may best suit the patient ; the dose once a day may be increased or diminished a little, as may best suit the state of the bowels of the individual.

A Yankee in Connecticut is manufacturing what he calls " Patent Liver Complaint." It is said to possess several advantages over the old kind. He depends upon the West for a market.

To Cure Warts.

A correspondent of the London Journal gives the following receipt for getting rid of warts : "Touch the warts every morning with weak nitric acid for about a week and they will disappear." A better receipt of our own is this : Rub the wart or warts every morning with a little piece of sal soda, wetting them and let the soda dry on your hands. There was a lage wart on our forefinger a week ago, and after rubbing it twice it has now nearly disappeared. Alkalies dissolve hard cartilaginous substances, and we have no dobut but soda would be excellent in the treatment of cancer.

To keep Apples for Winter use.

Put them in casks or bins in layers, well covered with *dry* sand ; each layer being covered. This preserves them from the air, from moisture, and from frost ; it prevents them perishing by their own perspiration, their moisture being absorbed by the sand ; at the same time, it preserves the flavor of the apples, and prevents their wilting. Pippins have been kept in this manner sound and fresh till midsummer ; and how much longer they would have kept is not known. Any kind of sand will answer, but it must be perfectly dry.

A New Species of Life Preservers.

Recently, says a St. Louis paper, we saw a mattress enveloped in one of the *India Rubber* covers, and it floated about in the Mississipi, with a man upon it, with all safety. Their introduction on board our steamboats would relieve passengers of much of the anxiety arising from accidents to the vessels, as they would be the certain means of safety whenever it became necessary to leave the boat. *A carpet bag*, of the same material, filled with thirty or forty pounds of iron, floated about the water as safely as if nothing was in it and demonstrated that it might be used to save the life of its owner as well as his clothing. So of many other articles.

THE NEW YORK

SCIENTIFIC AMERICAN:

This paper, the most popular weekly publication of the kind in the world, is published *At* 128 *Fulton Street, New York, and* 13 *Court Street, Boston,*

BY MUNN & COMPANY.

The principal office being at New York.

The SCIENTIFIC AMERICAN is the Advocate of Industry in all its forms, and as a Journal for Mechanics and Manufacturers, is not equalled by any other publication of the kind in the world.

Each number contains from FIVE to SEVEN ORIGINAL MECHANICAL ENGRAVINGS of the most important inventions ; a catalogue of AMERICAN PATENTS, as issued from the Patent Office each week ; notices of the progress of all new MECHANICAL and SCIENTIFIC inventions ; instruction in the various ARTS and TRADES, with ENGRAVINGS ; curious PHILOSOPHICAL and CHEMICAL experiments ; the latest RAILROAD INTELLIGENCE in EUROPE and AMERICA ; all the different MECHANICAL MOVEMENTS, published in a series and ILLUSTRATED with more than A HUNDRED ENGRAVINGS, &c. &c.

This Journal is not only useful to the Mechanic and Manufacturer, but instructive to the Farmer, apprising him of all the improvements in Agricultural Implements, besides to instruct him in all the Mechanical Trades.—As a family paper, the Scientific American will convey more useful Intelligence to children and young people, than ten times its cost in schooling, and as a text book for future reference, (it being in quarto form, paged, and suitably adapted to binding,) each volume will contain as much useful information as a large library.

The Scientific American has already attain- the *largest* circulation of any weekly mechanical journal in the world, and in this country its circulation is not surpassed by *all* the other mechanical papers combined.

☞ For terms see inside.

© 1847 SCIENTIFIC AMERICAN, INC